

CAPITAL MANAGEMENT PROCESS REVIEW FOR THE GOVERNMENT OF BRITISH COLUMBIA

Final Report

April 2000

**Deloitte
Consulting**

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EXECUTIVE SUMMARY

BACKGROUND

Purpose

This report presents the findings, conclusions and recommendations of a review completed by Deloitte Consulting of the Capital Management Process within the Government of British Columbia from late 1999 to early 2000.

Review Objectives

The objectives of the review were:

- To assess the framework (legislation, policies, directives, etc.) used by the Government to manage capital projects;
- To assess the practices that are followed to implement capital projects; and
- To provide recommendations, where appropriate.

Scope of Review

The scope of this review was an examination of the management practices of the Government at the central agency level, within government ministries and the non-commercial Crown corporations. Generally, the scope of our work excluded information technology projects, and investments not considered capital. As part of the analysis, we examined a number of major capital projects. The Fast Ferries Project was specifically excluded because of other ongoing reviews. These projects were examined in the broad context of selected capital management practices. The purpose was **not** to assess the appropriateness of a project nor provide a detailed examination of any individual project. We are offering no overall opinion on any of the projects examined.

*Selected projects
of \$2.7 billion ...*

Nine representative projects were selected and examined by Deloitte Consulting. The value of the projects approximated \$2.7 billion. The projects were:

- Smithers Secondary School expansion
- Kelowna Cancer Centre
- North Fraser PreTrial Centre
- Port Mann Bridge/Cape Horn Interchange
- Royal Jubilee Hospital Diagnostic and Treatment Centre replacement
- Technical University of British Columbia
- Vancouver General Hospital planned facility replacement and renovation
- Vancouver Trade and Convention Centre expansion
- SkyTrain extension

*... are among
the biggest.*

The review should be understood in the context of the Government's total capital program. In 1999, about 2,300 social capital projects were underway. Schools and health projects represented 85% of the total number. Only 8% of the projects were larger than \$10 million in size. Thus we focussed on the types of projects that had the higher financial and risk exposure.

***Significant changes
are underway ...***

We identified a number of reviews, studies and audits that were conducted on the capital management process and on specific large capital projects in the past five years. Each review resulted in recommendations that have influenced the Government's organization and processes for managing capital. Many of the changes attempted to promote central agency (e.g., Treasury Board) control and accountability.

Two major initiatives are in progress. One tracks capital expenditures within ministries. The other introduces a sophisticated, earned value management reporting approach.

... but challenges exist.

While progress has been made, there are signs that more improvement is necessary; different practices exist in the ministries and Crown corporations, the Cabinet wishes to accelerate project delivery and the Auditor General's reports, particularly in the review of the Fast Ferries Project, continue to identify weaknesses.

SITUATION ANALYSIS

In the following paragraphs, we highlight the findings and conclusions from our review of the current situation.

***Project
governance
is weak.***

The need for a comprehensive, consistent framework to guide in the identification, justification, approval and implementation of projects has been identified by the Government but it has yet to be completed or implemented. The result is inconsistent management of projects, unclear accountability for success or failure of a project, and often slow decision-making.

The legislation and policies regarding the role and authority of central agencies to monitor, investigate and control capital projects being funded by the decisions of the Treasury Board Ministers are unclear.

***Project justification
is adequate but
requires improvement.***

Every capital project must go through a process of identification, definition and justification. Some projects identified risks, constraints, potential impacts, and implications. However, the analyses in many cases lacked sufficient support. Risks and impacts associated with projects were not always clearly identified.

Some projects had analysis to support the need for a capital project but did not address the impact on a ministry's future operating budget, i.e., would the funds be available to operate the facility once it was built? Therefore, there was limited linkage between the capital and operating budgets.

Health care projects are particularly difficult.

We reviewed project management from the identification stage through to completion in a number of ministries with major capital projects. The projects comprised: highway improvements, hospitals, a school addition, a detention centre, the SkyTrain extension, a university and the Vancouver Trade and Convention Centre expansion. Health care facilities appear to be particularly difficult projects to complete. By comparison, other ministries' projects are brought forward and implemented faster and with less problems than the Ministry of Health.

The attributes of health care projects and the management process contribute to the situation: extensive consultations with a wide group of stakeholders; multiple sources of potential funding; sophisticated building and equipment concepts; health facilities that are integrated into a local or provincial health care delivery strategy; significant costs that are both one-time and on-going; and an overall demand for facilities that exceed current funding ability. We found general agreement that the process is too long, frequently repetitious and lacks standard practices.

Ministries have a reasonable approach to capital planning, but ...

Ministries and tax-supported Crown corporations annually prepare Long-Term Capital Plans. This is an excellent approach to forecasting capital needs and communicating within the ministry and to the central agencies of future potential capital projects and the likely funding levels.

... project selection is often made difficult.

Governments in Canada face competing demands for capital and operating funds. Ministers of government expect relevant and timely information as the basis on which to exercise their judgement on priorities. We believe that capital expenditure decisions among certain ministry proposals is made difficult because of inadequate information in the justification of projects.

Risk needs to be managed.

All projects inherently contain risk. Risk factors include large dollar amounts, design difficulty, environmental concerns, speed of construction, etc. We found only limited evidence on certain projects that such risks, particularly in the early stages of a project, are identified and well managed by the central agencies or that Ministers provide explicit direction to government officials to manage such risk. There is little evidence of an administrative framework to manage projects in proportion to risk.

Project reporting is weak and lacks authority.

We found that the authority of central agencies, which ultimately fund these capital projects, to demand and stipulate progress reporting is unclear and open to challenge. The ability of central agency officials, by law or policy, to obtain information on projects is unclear. This apparent lack of clear authority was most apparent with Crown corporations, and these entities frequently have the largest and most difficult projects to implement. Furthermore, where reports exist we found that the information was unclear, inconsistent and not always timely. Some good practices were found but in many cases this was the exception.

***Untimely project
announcements.***

We found instances where Ministers announced a capital project before final approvals had been made by the Treasury Board Ministers. Project announcements created expectations within the ministries or the community that appeared to be unrealistic in terms of final designs, final approval or construction schedules. This has and can lead to frustration among various parties, increased project delivery risk, and cost escalations.

***Project implementation
generally
well executed.***

Project implementation, i.e., detailed planning and construction, begins once the approval to proceed is authorized. Those projects which were well executed usually displayed attributes such as:

- Good project justification;
- Reporting commensurate with risk;
- Strong project management; and
- Clear authority and accountability.

***Adequate requirements
stage.***

Each project implementation should begin with a clear definition of the requirements or need for the project. This then gets turned into specific solutions. Those projects that were well managed displayed very good analysis of the requirements or solutions.

***Procurement and
construction well done.***

We found few instances of problems in the actual tendering process or the construction of the work according to the plans and blueprints. Some deviation is common but most were within acceptable limits.

***Post-completion
reviews needed.***

A common shortcoming of many types of projects in the public and private sector, including capital projects, is the absence of a post-completion analysis or follow-up to track lessons learned and areas for future improvement. The Government of British Columbia projects appear to be no exception to this general state. Improvement in this area is warranted.

PROJECT MANAGEMENT FRAMEWORK

***An enhanced capital
management
framework is
recommended ...***

Our overall conclusion and recommendation is that a single, integrated framework is needed to ensure a higher success rate on the Government's capital projects. Such a framework would add discipline and structure to the management process. Further, such a framework would integrate existing good practices, the initiatives already underway, and the additional improvements being recommended by Deloitte Consulting.

***... which enhances
existing initiatives ...***

To improve the overall planning and control of capital projects, we are recommending that many of the newly introduced concepts by Treasury Board officials be enhanced or expanded. Their plans for future improvements should be accelerated.

***... consistent with
best practices, and ...***

Our proposed model is consistent with best practices that were identified in other government jurisdictions in Canada and the United States, as well as the private sector. They have equal applicability to the Government of British Columbia.

*... built on
six main cornerstones.*

To achieve the future state of effective project management, our recommendations are built on six cornerstones or concepts; these are:

- Greater authority by the Minister of Finance and Corporate Relations on the management and monitoring of capital projects regardless of which government body delivers the projects;
- A structured and disciplined capital management process;
- Clear roles and responsibilities, with Treasury Board playing a central role;
- Justification of capital projects through business case analysis of social, economic and financial factors;
- Project classification and reporting based on cost and risk; and
- A standard regime for complete, accurate and timely project reporting.

NEXT STEPS

*A proposed roadmap to
improvement is
recommended ...*

We are proposing a series of initiatives over the next 18 months that involve a combination of:

- Legislative changes;
- Administrative policy development;
- Introduction of analytical tools and methodologies;
- Structured reporting requirements;
- Standard project development and implementation guidelines; and
- Communication and training.

The roadmap provides a timeline and allows accountability to be assigned, and progress against milestones tracked. With the exception of some Capital Division and Crown Corporations Secretariat initiatives, there does not appear to have been a plan to implement recommendations of any of the previously conducted studies.

*... combined with a
very disciplined
approach to project
management.*

Our proposals when implemented will lead to a very disciplined approach for the benefit of government Ministers and officials. The authority and accountability to plan, approve, monitor and, if necessary, investigate projects will be clear. Pre-requisites for approval to move to a subsequent stage of a project will be clear.

Risk cannot be eliminated on major capital projects, but the exposure to risk can be reduced. The improved approach will ensure that all parties are informed of the risk; practices will be in place commensurate with the risk; and the authority to take remedial action, if necessary will exist.

The emphasis is on creating a political and management culture that effectively informs the government of the benefits, costs and risks of its projects, presents the trade-offs involved in project delivery and allows effective management for the implementation and control of a capital project.

I. INTRODUCTION

A. ASSIGNMENT BACKGROUND, OBJECTIVES AND SCOPE

The Government of British Columbia has a strong history of investing heavily in the Province's future through capital infrastructure spending. With this emphasis on capital spending, the processes related to the budgeting, planning and execution of capital projects by the Government of British Columbia have become the subject of intense scrutiny. Some of the reviews of the provincial capital program in the last decade have included:

- A review by Treasury Board staff in 1992;
- A review by consultants working for Treasury Board staff in 1995;
- A review and industry consultation process by the Ministry of Employment and Investment in 1995;
- A review by the Capital Expenditure Review Working Group completed in January 1997;
- The report of the Budget Process Review Panel (the Enn's Report) 1999;
- Various Auditor General's reports; and
- Various reviews within individual agencies.

Each review has resulted in recommendations that have shaped the current organization and processes related to the capital program.

In April 1998, the Treasury Board addressed a large number of the prevailing recommendations by creating the Capital Division of the Ministry of Finance and Corporate Relations (MFCR). The new organization brought together staff from the Treasury Board, the Ministry of Employment and Investment, and the facilities branches of the five social capital ministries. The rationale behind this consolidation was that such an organization would:

- Promote central agency accountability and fiduciary responsibility;
- Promote full spending of the annual capital allocation;
- Promote more cost-effective solutions across government; and
- Deliver administrative efficiencies and benefits from concentrated expertise.

Since its inception, the Capital Division has developed and promoted a number of good organizational, policy and procedural concepts. Examples of these efforts include:

- Developing standardized tools and templates for preparing business cases;

- Linking strategic planning efforts to capital planning and budgeting; and
- Conducting third party reviews of projects throughout their lifecycle to ensure proper due diligence and reviews are completed.

The effective implementation of an integrated, consistent capital management process has, however, been hampered by a number of issues:

- Challenges in merging capital management processes from different ministries into a single entity;
- The impact of the capital expenditure freeze on proposed and existing projects;
- Increased media and stakeholder scrutiny of individual projects resulting in additional ad hoc information requests and demands on Treasury Board staff; and
- The desire on the part of Cabinet to accelerate decision-making and announcement of major projects.

In early 1999, after public concerns were raised about one particular project, the Fast Ferries Project, the Office of the Auditor General conducted a special review, released in October 1999. It found many anomalies from what it considered good practices.

In response to the Auditor General's report and with a concern that some of the deficiencies noted by the Auditor General may not be isolated incidents, the Minister of Finance and Corporate Relations decided to obtain independent advice on management practices for major capital projects.

Deloitte Consulting was engaged in late 1999, through a formal tendering process, to provide such a review.

The objectives of the review were to provide:

- An assessment of the framework (policies, directives, rules etc.) put into place by the Government to plan and manage major capital projects;
- An assessment of the practices that are followed in the planning, delivery and monitoring of capital projects given the framework; and
- Recommendations for improvement.

The scope of the review included:

- An examination of decision-making, planning, delivery and monitoring;
- Consideration of best practices from government and industry; and
- Examination of Government capital projects, selected by Deloitte Consulting; this included projects that are completed, in progress or under consideration.

The work was conducted with a focus on infrastructure projects greater than \$3 million. Excluded from the review were systems and information technology projects, projects undertaken by commercial Crown corporations, and the Fast Ferries Project. In the latter instance, a number of other reviews were already underway.

This review focussed on the overall capital process with a view to evaluating general management policies, procedures and practices. The review did not incorporate a detailed audit nor did it assess the appropriateness of investment decisions. Rather, the review determined the degree to which management policies, procedures and practices are in place to ensure due diligence is carried out in identifying, planning for, approving, implementing and commissioning capital projects. Where project examples are cited they are not intended to be an opinion regarding the entire project.

B. ASSIGNMENT APPROACH

At the outset of the assignment, it was agreed that our review should be completed in early 2000 to ensure that any recommendations could be incorporated, where appropriate, into the planning process for the next fiscal year.

Our review of the capital process was initially based on an examination of files and documentation provided by the Capital Division (Ministry of Finance and Corporate Relations) related to the capital planning and budgeting process as well as plans and requests of individual ministries and major projects. We also conducted interviews with selected members of the Capital Division to gain a detailed understanding of the existing capital management process as well as the actual practices.

Our lines of inquiry highlighted the key phases of a capital project upon which we focussed our review. They included:

- General Information;
- Project and Risk Management;
- Responsibility and Accountability;
- Requirements Definition;
- Specifications Definition;
- Procurement Process;
- Construction; and
- Delivery/Commissioning.

Further details of our lines of inquiry are provided in Appendix 1.

In addition to drawing on practices from other jurisdictions, the Government's own best practices were used to introduce improvements to the capital management process.

To obtain a cross section of the different practices, we met with individuals from the following entities in addition to Capital Division staff at the Ministry of Finance and Corporate Relations:

- BC Buildings Corporation;
- BC Cancer Agency;
- BC Transportation Financing Authority;
- Capital Health Region;
- Capital Regional District;
- Crown Corporations Secretariat;
- Health Association of BC;
- Ministry of Advanced Education, Training and Technology;
- Ministry of Attorney General;
- Ministry of Education;
- Ministry of Employment and Investment;
- Ministry of Health and Ministry Responsible for Seniors;
- Ministry of Transportation and Highways;

- Rapid Transit Project 2000 Ltd. (SkyTrain extension);
- Royal Jubilee Hospital (Victoria);
- Technical University of BC;
- Vancouver/Richmond Health Board;
- Vancouver General Hospital; and
- Vancouver Trade and Convention Centre Authority.

We met with certain consultants retained by the Province to obtain their views on capital projects. In addition, we met with the Office of the Auditor General to brief the Office on our lines of inquiry and to ensure that it was aware of our overall methodology, scope and approach.

Towards the end of our review, two working sessions were held to test potential recommendations. The first consisted of individuals representing Treasury Board staff, a number of ministries, local agencies, and Crown corporations. The second consisted of individuals representing various stakeholders in the area of health care.

C. PROJECTS REVIEWED

As part of conducting the review, Deloitte Consulting selected a sample of representative projects to assess the results of the existing capital management practices.

The sample of nine projects was selected using both quantitative and qualitative criteria including:

- Minimum project size of \$3 million;
- Projects at all stages e.g., preplanning, planning, construction, etc.;
- A range of ministries;
- Projects with high visibility or interest; and
- Different geographic locations.

The total value of the projects selected was approximately \$2.7 billion. Table I.1 lists each project as well as provides a brief description, total project cost and the ministry/Crown corporation responsible.

Table I.1 – Capital Projects Reviewed in the Study

Project Name	Description	Total Estimated Project Cost (\$ millions)	Ministry/Crown Corporation Responsible
Smithers Secondary School	Addition/renovation to existing facility	3.4	Ministry of Education
Kelowna Cancer Centre	New facility construction	27.3	Ministry of Health
North Fraser PreTrial Centre	New facility construction	49.0	Ministry of Attorney General and the BC Buildings Corporation
Port Mann Bridge/Cape Horn Interchange	Upgrade construction	63.8	Ministry of Transportation and Highways, and the BC Transportation Financing Authority
Royal Jubilee Hospital (Victoria)	Facility replacement, renovations and new construction	101.6	Ministry of Health
Technical University of British Columbia	New facility construction	103.0	Ministry of Advanced Education, Training and Technology, and ICBC
Vancouver General Hospital	Facility renovations, replacement and expansion	156.1	Ministry of Health
Vancouver Trade and Convention Centre	New facility construction and expansion	988.0	Ministry of Employment and Investment, and the Vancouver Trade and Convention Centre Authority
SkyTrain	New facility construction and extension	1,166.5	Rapid Transit Project 2000 Ltd.

D. TERMINOLOGY AND DEFINITIONS

This section defines a number of terms that are used within the report:

- The **Government** refers to the Government of the Province of British Columbia.
- The **Capital Division** is a division of the Treasury Board that has responsibility for capital management policy and procedures. Where we refer to Treasury Board staff, we are referring to the staff in the Capital Division;
- The **Treasury Board** refers to the Ministers of the Crown acting as the Treasury Board; and
- **Treasury Board Staff** refer to the staff of Capital Division.

- **Social Capital Ministries** refer to the Ministries of Education, Advanced Education, Training and Technology, Health and the Ministry Responsible for Seniors, Children and Families, and Attorney General.
- **Local Agencies** refer to school boards, post secondary institutions (including universities, colleges and institutes), community health councils and/or regional health boards.
- **Crown Corporations Secretariat** is an agency that provides advice to Ministers Responsible, Cabinet and Crown Corporations on individual and cross-corporate issues and initiatives.
- **Crown Corporations**

For the purpose of this report, we have divided Crown corporations into two groups: commercial and non-commercial. Exhibit I.1 lists the 26 Crown corporations by group.

Commercial Crown corporations generally require no on-going contributions from government while non-commercial Crown corporations receive regular funding assistance from government. Non-commercial Crown corporations are also referred to as taxpayer-supported Crown corporations.

Exhibit I.1 - Crown Corporations by Category¹

Commercial

British Columbia Hydro and Power Authority*
British Columbia Lottery Corporation*
British Columbia Railway Company*
Insurance Corporation of British Columbia*

Non-commercial

British Columbia Assessment Authority*
British Columbia Assets and Land Corporation
British Columbia Buildings Corporation*
British Columbia Community Financial Services Corporation
British Columbia Ferry Corporation*
British Columbia Housing Management Commission
British Columbia Pavilion Corporation*
British Columbia Transit*
British Columbia Transportation Financing Authority*
Columbia Power Corporation*
Duke Point Development Limited
First Peoples' Heritage Language and Cultural Council
Fisheries Renewal BC
Forest Renewal BC
Homeowner Protection Office
Okanagan Valley Tree Fruit Authority
Pacific National Exhibition*
Provincial Capital Commission*
Rapid Transit Project 2000 Ltd. *
Tourism British Columbia
Victoria Line Ltd. *
Workers' Compensation Board

* Crown corporations that report to CCS and the Cabinet Committee on Crown corporations

¹ Source: Crown Corporations Secretariat

E. ACKNOWLEDGEMENTS

We would like to acknowledge the high degree of assistance and cooperation on the part of all the ministry, Crown corporation, agency and project staff members that assisted us in our review, particularly those who participated in interviews and workshops.

F. REPORT STRUCTURE

The main body of the report is structured as follows:

- Section II presents a description of the current processes in capital management within the Government of British Columbia. This is based on reviews of existing documentation and interviews with staff in the Capital Division, a number of ministries and several Crown corporations;
- Section III presents an analysis of the current practices;
- Section IV presents a capital management framework or future state where effective project management would be in place;
- Section V follows with details of our recommendations; and
- Section VI concludes the report with a "roadmap" for the future, highlighting a strategy to implement the recommendations.

A number of Appendices to this report provide details to recommendations and concepts presented in the main body.

II. CURRENT SITUATION – AN OVERVIEW OF CAPITAL MANAGEMENT PROCESSES

A. TYPES OF CAPITAL EXPENDITURES

There have been recent efforts by the Capital Division to more accurately define the types of capital expenditures that are eligible for funding through the Consolidated Capital Plan (CCP). Such expenditures are usually debt-financed and are categorized as follows:

- ***Capital Improvements***

Capital improvements are expenditures required to ensure that the physical plant meets or exceeds its intended economic life. This can be accomplished by extending the life of its components and/or provide increased efficiency or utility, correcting deficiencies in design and/or construction which occur beyond the warranty period and correct unsafe conditions such as building code deficiencies, occupational health and safety, and access.

- ***Renovation (Program Driven)***

Program driven renovation projects are expenditures to renovate or upgrade existing facilities to respond to changes in programs and/or program delivery.

- ***Replacement***

Replacement projects are expenditures required to replace an existing facility because the facility has reached the end of its useful life, the facility is no longer suitable for the purpose it was intended for and/or its location is no longer suitable.

- ***Expansion***

Expansion projects are expenditures required to increase capacity to meet provincial growth or an increase in program delivery and includes projects that add new space through construction of a new facility or an addition to existing facilities.

Table II.1(a) shows the current year's budget and the 1998/99 actual capital expenditures (in millions of dollars) by agency and by type of capital that were subject to the processes outlined in this section.

Table II.1(b) shows a two-year comparison of budget versus actual and forecast. These tables show the constant growth in capital expenditures. The variances indicate the difficulty in the planning and delivery of capital projects and particular timing for construction, approvals, etc. As one example, in the past two years, the Ministry of Health has not spent all of its allocated capital funds.

It is important to recognize the number of projects and the relative size of the Government's capital program. The number of social capital projects that were ongoing or proposed in 1999 totaled approximately 2,300. Out of this total, schools represented almost 60% and health projects 25%. With regard to the sizes of projects, almost 80% were considered "minor" (i.e., less than \$1.5 million) and only 8% were over \$10 million.

For the past five fiscal years ending 1999-2000, the number of capital projects (completed or ongoing), that were over \$25 million each totaled only 41. Out of this total of 41, 18 were health projects and 14 were highway projects.

It should be noted that these expenditures do not represent the entire capital expenditures of the Government; some Crown corporations and other entities e.g., the Vancouver Trade and Convention Centre, would add to the expenditures volume.

Table II.1(a) – Consolidated Capital Plan Expenditures by Type²

Agency	Capital Improvement		Renovation		Replacement		Expansion	
	98/99	99/00	98/99	99/00	98/99	99/00	98/99	99/00
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Education	\$76.3	\$63.9	\$22.3	\$23.8	\$70.5	\$40.9	\$253.7	\$212.5
Transportation Financing Authority	\$139.1	\$137.3	-	-	-	-	\$245.4	\$352.1
Rapid Transit Project	-	-	-	-	-	-	\$190.0	\$410.0
Health	\$53.1	\$185.8	\$2.9	\$5.1	\$41.8	\$94.1	\$71.3	\$73.9
BC Ferries	\$16.6	\$18.0	-	-	-	-	\$136.4	\$121.0
Advanced Education, Training & Technology	\$15.7	\$33.0	\$38.1	\$30.6	-	\$3.2	\$27.5	\$60.2
BC Transit	\$2.9	-	-	-	\$7.8	\$15.0	\$42.1	\$10.8
BC Buildings Corporation	\$11.5	\$8.0	-	\$3.0	-	-	\$0.8	-
Attorney General	-	-	\$2.1	\$6.8	\$0.3	\$0.5	\$7.3	\$24.3
Children & Families	\$0.7	\$2.8	-	-	-	\$6.0	\$1.3	\$9.9
TOTALS	\$315.9	\$448.8	\$65.4	\$69.3	\$120.4	\$159.7	\$975.8	\$1,274.7

Table II.1(b) – Consolidated Capital Plan Expenditures (Budget vs. Actual)²

Agency	1998/99		1999/00	
	1998/99	98/99 Actual	99/00 Budget	1999/00 Total Forecast
	Total Budget			
Education	\$339.2	\$422.8	\$341.1	\$430.0
Transportation Financing Authority	\$350.1	\$384.5	\$489.4	\$480.2
Rapid Transit Project	-	\$190.0	\$410.0	\$420.5
Health	\$221.9	\$169.1	\$358.9	\$230.1
BC Ferries	\$85.0	\$153.0	\$139.0	\$129.6
Advanced Education, Training & Technology	\$84.0	\$81.3	\$127.0	\$70.0
BC Transit	\$118.8	\$52.8	\$25.8	\$22.2
BC Buildings Corporation	\$13.0	\$12.3	\$11.0	\$10.3
Attorney General	\$15.3	\$9.7	\$31.6	\$25.4
Children & Families	\$18.7	\$2.0	\$18.7	\$2.9
TOTALS	\$1,246.0	\$1,477.5	\$1,952.5	\$1,821.3

B. CAPITAL MANAGEMENT GOVERNANCE

1. Central Agencies

The Government has created a number of central agencies to oversee the capital management activities of ministries and Crown agencies. The responsibilities and accountabilities of central agencies are derived from legislation or other authorities.

² Source: Capital Division

There are four main central agencies responsible for capital management activities of ministries and Crown agencies, including: Treasury Board staff, the Office of the Comptroller General, the Provincial Treasury and the Crown Corporations Secretariat (CCS).

Treasury Board

The committee of the Executive Council, called Treasury Board, consists of the Minister of Finance and Corporate Relations as chair, and other members of the Executive Council appointed by the Lieutenant Governor in Council, one of whom must be designated in the appointment as vice chair.

On the recommendation of the Minister of Finance and Corporate Relations, the Lieutenant Governor in Council appoints a senior public officer as secretary to Treasury Board.

Subject to the *Financial Administration Act* (FAA) and the directions of the Executive Council, Treasury Board may determine its rules and methods of procedure.

According to the FAA, Treasury Board must act as a committee of the Executive Council in matters relating to the following:

- Accounting policies and practices, including the form and content of the Public Accounts and the Estimates;
- Government management practices and systems;
- Government financial management and control, including expenditures and assets;
- Evaluation of government programs as to economy, efficiency and effectiveness;
- Government personnel management; and
- Other matters referred to it by the Executive Council.

Treasury Board is the decision and approval authority for government expenditures. With respect to capital budgeting, Treasury Board relies on the recommendations of the Capital Division, but is, itself, ultimately responsible for approving the Consolidated Capital Plan (CCP).

Treasury Board has an oversight role on capital projects. To that end, any major project irregularities discovered by the Capital Division are presented to Treasury Board. As well, for major social capital projects, Treasury Board is responsible for approving Completion Approval Requests (CARs) that allow a project to proceed from the planning stage to the implementation stage.

For some Crown agencies, and particularly for selected tax-supported and government funded Crown corporations, Treasury Board staff and the Crown Corporations Secretariat advise Treasury Board on capital and operating budgets.

Ministry of Finance and Corporate Relations

The Ministry of Finance and Corporate Relations (MFCR) is a ministry of the public service of British Columbia. The Minister of Finance and Corporate Relations is responsible to the Lieutenant Governor in Council for the direction of the MFCR.

The Minister of Finance and Corporate Relations is responsible for the management and administration of the consolidated revenue fund, supervision of the revenues and expenditures of the Government, and matters relating to the fiscal policy of the Government.

Every Minister is responsible for the administration of the financial affairs of his or her ministry, under the general direction of the Minister of Finance and Corporate Relations and Treasury Board.

Capital Division, a division of the Ministry of Finance and Corporate Relations, is responsible for providing analysis and recommendations to Treasury Board on all issues related to social capital projects and the capital expenditures of non-commercial Crown corporations. In essence, the role of Capital Division is to act as the Government's critical eye with respect to capital expenditures of social capital ministries making sure that money is being spent on the projects that align best with the Government's direction and ensuring that money is spent in a cost-effective manner.

Capital Division begins the annual capital budgeting cycle (Consolidated Capital Plan) by issuing budget instructions to the provincial agencies. Capital Division then reviews the Long-Term Capital Plans (LTCPs) and Capital Project Requests (CPRs) submitted by each provincial agency and presents its recommendations on the associated four-year notional Capital Expenditure Limits (CELs) to Treasury Board. Capital Division also reviews and aggregates, making recommendations to Treasury Board regarding specific projects.

Once Treasury Board approves the Consolidated Capital Plan, Capital Division's responsibilities are the monitoring of all capital expenditures by both social capital ministries and certain Crown corporations. As well, Capital Division is responsible for ensuring that all social capital projects are implemented in a manner that is consistent with Treasury Board approval. Related activities include project oversight, project monitoring, and the establishing of standards, unit rates and guidelines.

A final responsibility of the Capital Division, which was not examined as part of this review, is the management of a capital program to significantly reduce seismic hazards that can cause injury or damage to building occupants, operation, structure, and contents.

Office of the Comptroller General

The Lieutenant Governor in Council must appoint a person to be the Comptroller General in the Ministry of Finance and Corporate Relations, and the Comptroller General is an employee under the *Public Service Act*.

According to the FAA, the Comptroller General:

- Has access at all times to all ministries and branches of the Government and to their records;
- May require from any public officer information and explanations necessary for the performance of the Comptroller General's duties;
- May, on the direction of the Treasury Board:
 - *Require from any officer or employee of a public body, as defined in the Auditor General Act, information and explanations necessary to enable the Comptroller General to determine whether public money disbursed or spent by the Government has been or is being applied for the purpose for which it was appropriated; and*
 - *Examine and report on any or all of the financial and accounting operations of a Government corporation.*

- May examine any person under oath with respect to any matter that, under any Act, the Comptroller General is required or authorized to check, examine or control, and for the purposes of the examination the Comptroller General has the powers, protection and privileges of a commissioner under sections 12, 15 and 16 of the *Inquiry Act*.

The Comptroller General must, subject to any direction of Treasury Board, do all of the following:

- Develop and issue policies and guidelines and establish procedures for the financial management and recording of the revenues, expenditures, assets, liabilities and equity of the Government;
- Issue directives respecting the methods by which the accounts of the Government are kept;
- Administer and maintain the central accounts of the Government;
- Provide functional control over all financial transactions entered into the central accounting system;
- Evaluate financial management throughout the Government and recommend to Treasury Board improvements considered necessary;
- Prepare the public accounts and the financial statements of the Government, and any other financial statements and reports required by the Minister of Finance and Corporate Relations or Treasury Board; and
- Perform other duties assigned to the Comptroller General by the Treasury Board or under this or any other Act.

Provincial Treasury

The Provincial Treasury operates as the Province's banker. It looks after debt, manages banking and cash, administers loans and deals with risk management. These services are extended to all ministries, Crown corporations and public sector agencies.

Crown Corporations Secretariat

The Crown Corporations Secretariat (CCS) was established in 1991 to oversee a number of Crown corporations. At the time of this review, the role of the CCS was to provide central agency support and independent advice to Ministers Responsible, Treasury Board, the Cabinet Committee on Crown Corporations, and Cabinet on major governance, operational and strategic issues in the Crown corporation sector.

CCS provides advice and analysis in connection with the following broad areas:

- Strategic and business plan development
- Financial and rate of return analysis
- Reporting of financial, environmental, customer service and economic development performance
- Capital project development
- Pricing, dividends, taxation, procurement and entrepreneurship policy
- Compliance with cabinet policy
- Review of governance and funding arrangements

- Social and economic development policy
- Equity and aboriginal issues

2. Crown Corporations

In the Government of British Columbia, no general legislation covers Crown corporation governance issues completely, particularly as it relates to capital projects entrusted to these corporations. Two Acts, the *Financial Administration Act* (FAA) and the *Financial Information Act* (FIA), contain provisions affecting Crown corporations, but are limited in the issues addressed.

Amendments to the FIA in 1993 now require a Crown corporation to provide the Minister Responsible, the Minister of Finance and Corporate Relations, Cabinet, and any Cabinet committee with all strategic plans, business plans, capital and operating budgets, and any other information requested by the Minister Responsible for the corporation.

Because most Crown corporations are created by the Legislative Assembly, fulfilling a mandate set in legislation, it is the responsibility of the Legislative Assembly to ensure that the mandate is appropriately discharged.

Treasury Board staff, the Office of the Comptroller General Crown Corporations Secretariat and other central agencies also have roles in overseeing the activities of Crown corporations.

Collectively these central agencies provide staff support to Cabinet, Cabinet committees, the Minister Responsible, and the Minister of Finance and Corporate Relations.

Because there are a variety of central agencies involved in different aspects of Crown corporation's activities, roles and responsibilities can and do become blurred and duplicated. Coordination of central agency efforts has become an issue as it relates to capital governance.

A memorandum of understanding (MOU) has been prepared by the CCS and the other central agencies to clarify their respective roles and responsibilities with regard to Crown corporations.

The following documents outline the general authorities upon which both Treasury Board staff and CCS rely to carry out an oversight function of Crown corporation activities.

- Memo sent to all Crown CEO's regarding "Crown Agencies Roles and Accountabilities" agreed to by the Cabinet Committee on Crown Corporations (December 1992);
- Letter from Minister Clark to CEOs outlining CCS mandate (October 1993);
- Updated matrix of roles and responsibilities (November 1994);
- Mandate Statement of CCS (1995);
- Excerpt from the FAA (role of Treasury Board and the MFCR);
- The *Financial Information Act* (1996); and
- Division and Branch responsibilities of Treasury Board staff.

Board of Directors

Generally, the purpose and powers of a Crown corporation are set out in enabling legislation and are exercised through an appointed board of directors. In addition, either through the articles of incorporation or other mechanisms (governance manual), most Crown corporations set out the roles, responsibilities and authorities of directors, the Chair and senior officers.

In most instances, the board of directors of Crown corporations is appointed by the Lieutenant Governor in Council, although not in all cases; for example, BC Pavilion Corporation directors are appointed by the Minister. Also, with some Crowns, the enabling legislation sets out specific individuals (e.g., a Minister or mayor) who must be appointed; for example, appointments to the BC Transit board must be drawn from a legislatively prescribed category of candidates.

Role of the Minister Responsible for the Corporation

The Minister Responsible, usually in consultation with the Board, recommends director appointments to Cabinet. The Minister Responsible is the key link between the board of Directors and Cabinet. Through that link, the Minister Responsible provides strategic and policy direction on an informal or formal basis.

Generally, for Crown corporations under the purview of CCS, strategic and business plans, mutually satisfactory to the Board and the Minister, are prepared each year. In addition, a Crown corporation may be required to provide the Minister Responsible, Minister of Finance or a designated committee of the Executive Council, strategic plans, business plan, capital and operating budgets and other requested information (*Financial Information Act*, s.3). With assistance from senior officials, the Minister Responsible represents the Crown corporation during the Estimates Debate either in the Legislative Assembly or in various budget committees.

Enabling legislation generally provides that the Minister Responsible must be satisfied with the accounting system established and maintained by the Board of Directors and may require detailed accounts of revenues and expenditures for a period specified in legislation or as designated by the Minister. As well, the Minister Responsible must lay before the Legislative Assembly and annual report (including a financial statement) from the Crown corporation.

Role of Deputy Ministers

Deputy Ministers have no legislated role concerning Crown corporations. The *Interpretation Act* allows Deputy Ministers to act on behalf of Ministers, but there is no clear direction provided to the Deputies about Crown corporations.

3. Provincial Agencies

Provincial agencies include both the social capital ministries and non-commercial Crown corporations.

Provincial agencies are responsible for setting the overall goals and objectives of their respective agencies and communicating these to the local agencies. Provincial agencies are responsible for collecting the capital plans of their local agencies (if applicable) and producing an agency-wide LTCP as part of the annual budgeting process. This responsibility requires program assessment and needs identification and includes reviewing projects with respect to justification, alternatives, scope, budget, rates, overall priorities and consistency with the provincial Consolidated Capital Plan (CCP), capital expenditures and Government priorities.

4. Local Agencies

Local agencies are, in most cases, both the source of capital project requests and the owners of the resulting facilities. Local agencies include regional health boards, universities and colleges, and school districts. Each year, local agencies are asked to identify local needs and prepare and submit their LTCPs and CPRs to the corresponding provincial agency. The local agency is also responsible for coordinating the planning and construction of those projects that are approved by Treasury Board.

In the Ministry of Health, governance and the overall capital management process is made more complex by virtue of the number of players in the system and the wide variety of services provided. There are numerous local agencies involved in the planning and funding of capital projects, including but not restricted to:

- Community health councils;
- Community health service societies;
- Regional health boards;
- Cluster boards;
- Regional hospital districts (funding agencies); and
- Various associations (e.g., BC Health Association).

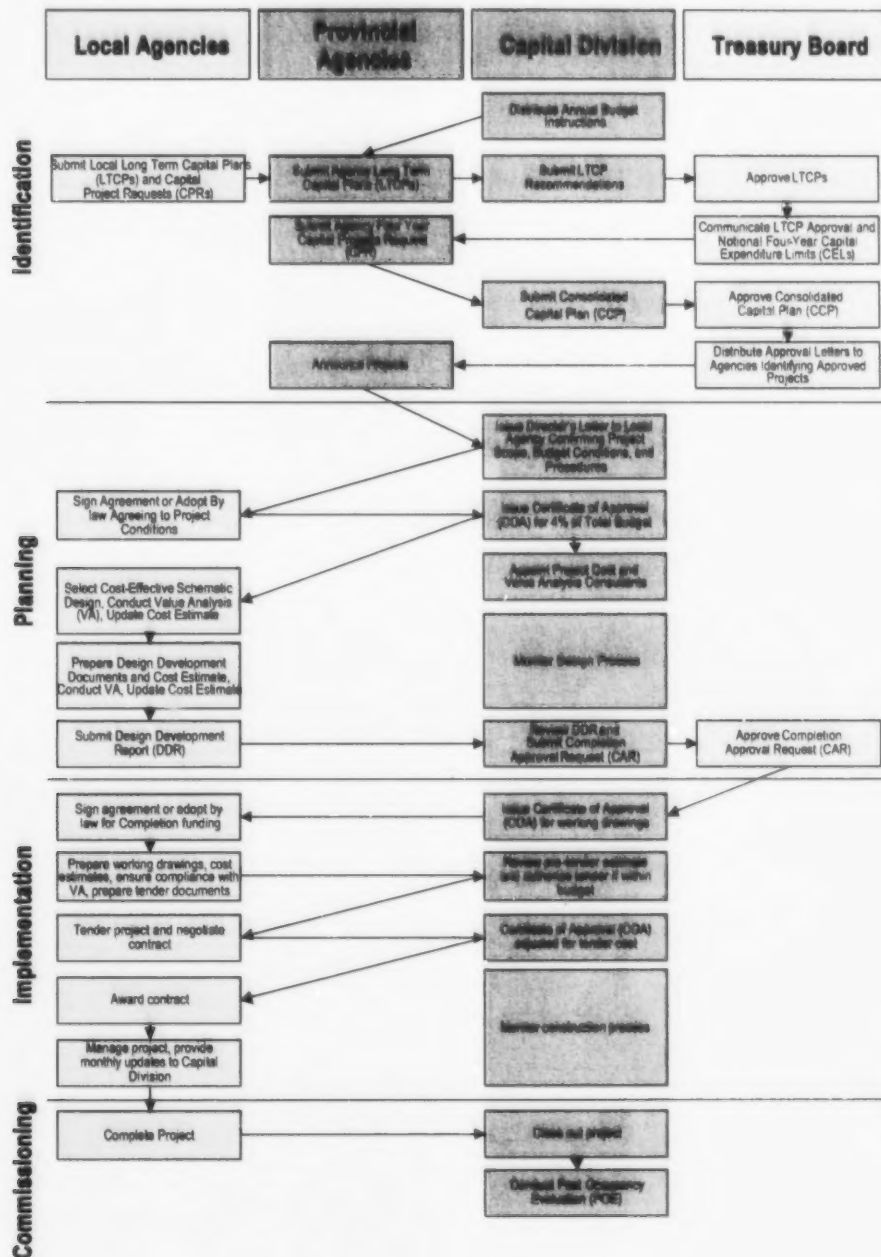
The sheer number of participants increases the complexity of the planning process, as do the differences between urban and rural agencies and their access to resources and expertise.

C. CAPITAL MANAGEMENT PROCESS OVERVIEW

1. Capital Management Processes

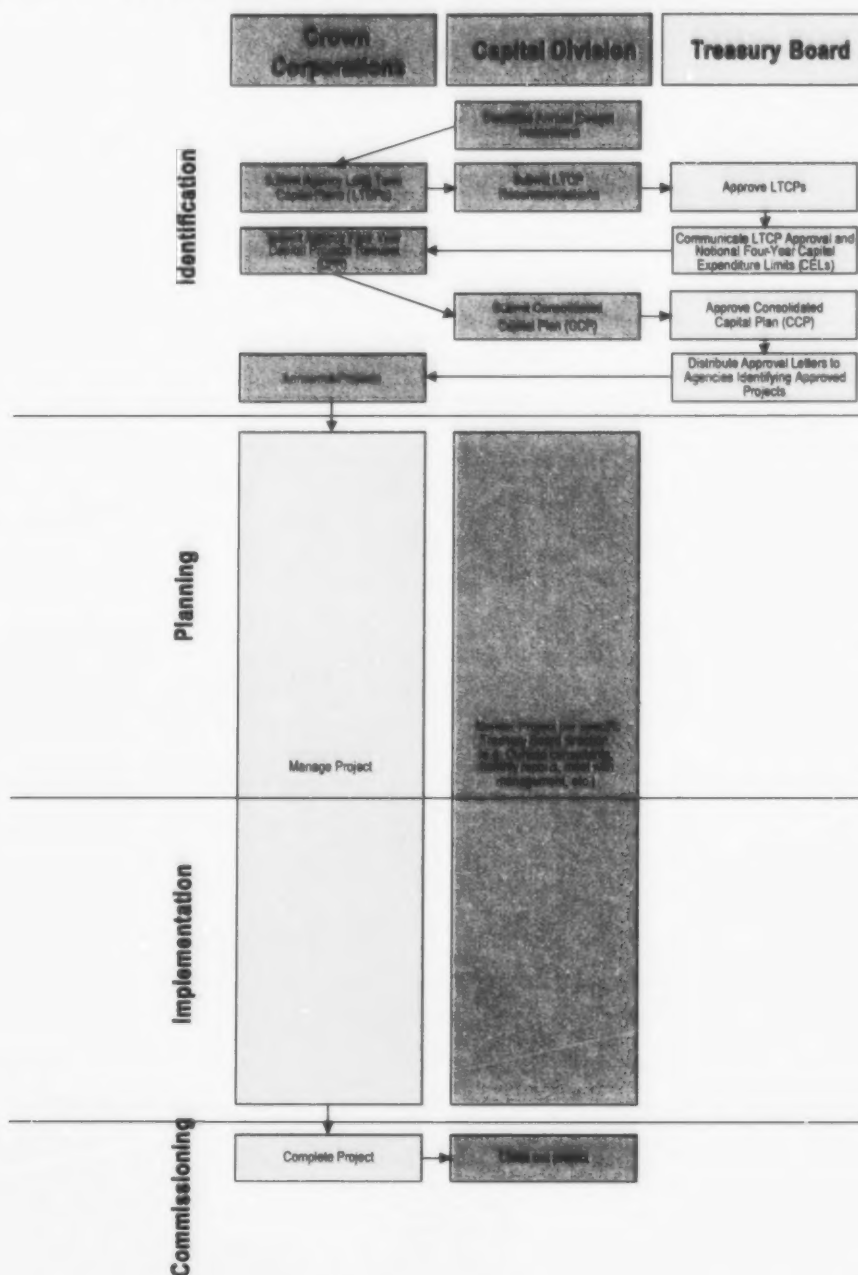
With the creation of the Capital Division in 1998, significant effort was expended to rationalize and standardize the provincial capital project processes across the entire Government, including non-commercial Crown corporations. Two major capital project processes are currently in place; one for social capital projects and one for non-commercial Crown corporation projects. These processes are described by Figures II.1-II.2 on the following pages. The application of these generic process models can vary considerably by agency and by project.

Figure II.1 - Traditionally Financed Social Capital Projects



- For minor social capital projects (under \$1.5M), a Certificate of Approval for the full amount is issued at the outset and the planning and design control steps are by-passed.
- Certain planning and design control steps can be by-passed if successfully implemented designs and plans are used.

Figure II.2 – Non-Commercial Crown Corporation Projects



- Crown corporations have full responsibility for managing and controlling project implementation. Capital Division monitors progress through periodic project reporting.

2. Illustrative Example

To further illustrate the capital management process, the following example shows how capital funds are budgeted, allocated, and approved for spending in the case of a large social capital project. This example, provided by the Capital Division, shows a very standard and generic situation and the process for many projects could vary considerably, depending on the size and scope of the project, and the specific agencies involved.

1. A School District identifies a requirement for new elementary school spaces. The School District's analysis indicates that a new school is required at a cost of \$6 million based on the program standards, facility and space standards, and unit rates that have been established for elementary schools. The project is requested as a part of the School District's local agency capital plan submitted to the Ministry of Education.
2. The Ministry of Education prepares its four-year Capital Projects Request (CPR), a ranked list of projects with projected cash flows consistent with the Ministry's four-year capital expenditure limits and includes a specific project totaling \$6 million for the School District.
3. Capital Division reviews the specific project and provides a recommendation to Treasury Board.
4. Treasury Board approves the project and issues information to the Ministry of Education, indicating that the school has been approved and any other conditions of approval.
5. The Ministry of Education announces the building of a new elementary school by the School District.
6. The Capital Division issues a Director's Letter to the School District communicating the project scope, budget, conditions, and procedures consistent with Treasury Board's direction. The School District adopts a by-law consistent with the project conditions.
7. The Capital Division issues a Certificate of Approval (COA) for \$240,000 (4% of the total budget) to fund the Planning stage of the project. The Capital Division also appoints Project Cost and Value Analysis consultants for the project.
8. The School District has three schematic designs prepared, picks the most cost-effective one and conducts a Value Analysis (VA) of the design. The VA indicates cost savings of \$200,000, so the budget estimates are revised to show a total remaining budget of \$5.56 million (\$6M-\$240,000 for planning - \$200,000 savings).
9. The School District conducts another VA, a refined cost estimate and then finalizes the design development documents. No further cost savings are found. The School District submits a Design Development Report (DDR) to the Capital Division.
10. The Capital Division reviews the DDR and submits a corresponding Completion Approval Request (CAR) including a recommendation to the Chair of Treasury Board. The purpose of the CAR is to ensure the project is still required based on the original justification and is consistent with Treasury Board's original approval (e.g., budget and scope). Once the Chair of Treasury Board approves the CAR, the Capital Division amends the COA for the cost of the working drawings.
11. The School District prepares working drawings, tender documents and cost estimates (that comply with the VA). The Capital Division authorizes the tender documents if the cost estimate suggests that they fall within the budget approved as part of the CPR.

12. The School District tenders the project and signs a contract with the selected vendor for \$5.2 million. Since this value is less than the remaining approved budget, Capital Division amends the COA to allow \$5.2 million for the completion of the project.
13. Capital Division monitors on-going School District capital expenditures and construction progress until the project is complete.
14. Capital Division conducts a Post Occupancy Evaluation on the completed school.

D. CAPITAL MANAGEMENT REPORTING PROCESS

The focus of this part of our review was on the construction phase within the implementation of capital projects and the reporting of costs and progress against budgets and schedules. In particular, we concentrated on the ability of the Central Agencies to monitor progress and costs.

One of the key responsibilities of the Capital Division is the monitoring of capital expenditures. The Capital Division has set as a goal for 1999/2000 the development of a monitoring process for non-commercial Crown corporations and a policy to ensure more comprehensive reporting on major capital projects. The Capital Division is also responsible for the management of the capital project tracking system to ensure that the conditions imposed by Treasury Board are met.

The implementation phases of capital projects have previously been criticized by the Auditor General and the development of enhanced policies and procedures for monitoring and reporting has been recommended.

The earliest guidance on reporting that we observed was contained in a memorandum dated July 14, 1995 addressed to the social capital ministries and to the senior finance officials of five Crown corporations. These instructions referred to the maintenance of the Capital Project Tracking System by the Capital Project Coordination Branch of the Ministry of Employment and Investment, and required that each social capital ministry and Crown corporation provide a signed-off quarterly reporting package to the central agency.

The next set of instructions were released under a memo dated April 22, 1996. The implementation of a carry-over policy was the focus of these instructions.

The information provided from these quarterly reports was used for the Ministry of Finance and Corporate Relations quarterly report and for briefing notes prepared by the Capital Project Coordination Branch and Treasury Board staff.

These two sets of instructions were the only guidelines provided by the central agencies until the end of May 1999.

In the period prior to that date, problems with the reporting of the status of the Fast Ferries Project began to surface and the Ministry of Finance commissioned a review on the approval and monitoring of capital projects. The report, dated May 11, 1999, identified certain weaknesses in the Government's reporting framework.

Treasury Board staff (Capital Division) issued a letter dated May 31, 1999 requiring social capital ministries and non-commercial Crown corporations to submit a monthly calendarized budget and monthly variance reports for capital projects. The instructions did not require this reporting on a project-by-project basis, but just a consolidation by agency into a single line. The reporting again was based on cash flows.

This reporting started in June 1999 and is used for a number of purposes:

- To brief the Minister of Finance monthly;
- For the Provincial Treasury in relation to borrowing requirements; and
- For the Budget and Policy Branch of Capital Division to monitor overall capital spending.

As a result of the Auditor General's review of the Government's budgeting process, this reporting is currently being modified so that additional information is received regarding accruals and sources of funding. A draft letter to this end has been prepared, but remains to be released.

These two latest instructions did not address the need for a comprehensive and central policy for reporting. We were informed that Capital Division have intended to develop a reporting policy and have been working on such since the Spring of 1999.

A reporting policy was originally drafted by Capital Division in June 1999 and the latest draft dated November 1999 was issued to a number of stakeholders for comment. We were informed that the finalization of this policy would not take place until after our report has been released.

The draft Reporting Policy combines the previous instructions under Agency Capital Expenditure Reports which will provide a monthly summary of expenditures for each agency including:

- Capital expenditures for the month concluded; and
- A re-calendarized budget forecast for the balance of the fiscal year.

If a re-calendarized budget is required, the report will provide:

- Reasons for the forecast variance;
- Strategy to address variance; and
- Impact of the variance.

In addition, two further reporting requirements have been proposed:

- Individual Summary Project Reports, which expand the quarterly reporting and could provide monthly detailed information on budget variances and other issues specific to each project, including:
 - *Cumulative actual capital expenditures by project;*
 - *Forecast capital expenditures to the end of the current fiscal year and future years, by project; and*
 - *An analysis of issues which have caused or may cause variances from budgeted amounts.*
- Supplementary Project Reports, which will focus on selected major projects and provide more detailed information to ensure that any significant variances or potential variances are identified as soon as possible and appropriately addressed. These reports will include:
 - *Forecast of final cost and material completion dates;*
 - *Progress and expenditures to date;*
 - *Comparisons of work completed expenditures;*
 - *Explanations of variances and strategies;*
 - *Analysis of cost and schedule impact of any variances;*

- *Summary of costs incurred and estimated costs to complete;*
- *Assessment of contingency plans and an analysis of the adequacy of reserves;*
- *Schedule charts (Gantt Charts); and*
- *Other conditions that may cause variances in the future.*

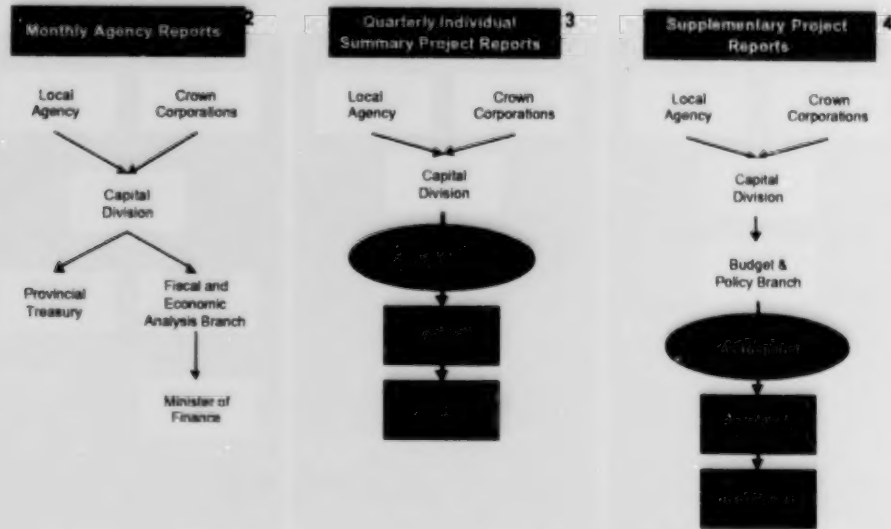
These two reports attempt to address two major weaknesses that have been in place for a number of years i.e., the lack of monthly reporting on individual projects and the implementation of Earned Value Management³ (EVM) reporting.

The draft policy requires EVM reporting for all projects over \$40 million. Based on analysis provided to us, this would cover 16 projects currently underway. It is noteworthy that EVM is a project management tool and is primarily for the benefit of the local agencies and Crown corporations, rather than central agencies.

As can be seen from Figure II.3, the responsibility for capital expenditure reporting for social capital projects to the Capital Division's Budget and Policy Branch rests with the Implementation Branch of the Capital Division. We were informed that the Implementation Branch is guided by the same instructions as described above and that it works with the local agency on a continuous basis regarding the status of individual projects.

³ Earned Value Management is a contemporary project management technique that focusses on work-in-progress.

Figure II.3 - Hierarchy of Reporting ¹



Monthly Report ⁵



Notes:

1. Prepared by the Capital Division.
2. Current cash flow reporting as required under the memo dated May 31, 1999.
3. Current quarterly reporting requirements as required under the memos dated July 14, 1995 and April 22, 1996. The new proposed draft policy requires this reporting on a monthly basis.
4. The new EVM reporting dated November 1999 is not fully implemented. Capital Division is reviewing the \$40 million threshold level for this requirement.
5. Monthly reports prepared by the local agencies or Crown corporations that are submitted to the Capital Division which then prepares the monthly cash flows and quarterly staff reports as currently required.

E. CAPITAL MANAGEMENT IMPLEMENTATION PROCESS

The theme of reports issued by the Auditor General have underlined the need to put in place an overall capital project policy framework that would guide the effective completion of capital projects within the Government of British Columbia.

The 1995 Ministry of Employment and Investment's Consultation Process on Public Construction identified that there was:

- A lack of central policy for capital; and
- No standardized procedures for procuring design and construction-related services.

The 1997 Capital Expenditure Review Working Group recommended that the Government assign the Ministry of Finance and Corporate Relations the responsibility of developing a Capital Policy Framework.

Capital Division has set a goal for 1999/2000, as part of its efforts to standardize business practices under capital policy development, that will:

- Streamline existing policies into a single capital policy framework; and
- Draft a capital policy and procedures manual.

Although the central agencies have identified the need for a consolidated, consistent framework to guide the construction of major capital infrastructure projects in the Government of British Columbia, to date, this has not yet been completed.

However, it should be recognized that capital projects in the Government are not undertaken without guiding principles in place. Each social capital ministry and Crown corporation involved in capital projects has its own internal policies, controls and procedures that overlay the management of capital projects. Thus, the policy framework for capital project management currently resides within each ministry and Crown corporation.

Central agencies have developed very little in the way of centralized capital policies. The MFCR has set general management and financial management operating policies on a government-wide basis, but these do not effectively deal with capital expenditures. For example, the contract management policies primarily deal with materials and service contracts. Furthermore, it is not clear whether Crown corporations fall under these policies.

The Capital Division has attempted to address the lack of a consolidated single source for a capital project management framework through the development of draft policies and frameworks covering certain aspects of the capital project cycle. In addition, instructions for capital expenditure budgets are released annually that provide guidance in the planning of capital expenditures for all projects. Individual instructions have also been released covering the reporting of capital expenditures.

There were major changes in the budget instructions from 1999/2000 to 2000/2001 in the area of needs analysis. As previously discussed in this report, the Capital Division has also prepared a draft Reporting Policy that remains to be finalized.

The Capital Division has drafted an Expenditure Control Framework (ECF) that covers all capital or investment proposals involving \$25 million or more in provincial contributions as well as proposed operating programs with an annual budget of more than \$3 million. The ECF addresses three distinct phases of financial management: proposals, implementation and evaluation. High-level principles are also included that guide the three phases. The ECF, however, does not go beyond the proposal phase.

Business case development guidelines are provided along with an Expenditure Proposal Development System (EPDS) that expedites fulfilling the requirements of developing a detailed business case for presentation to Treasury Board. The front-end aspects of capital projects have previously been criticized by the Auditor General and the development of sound business case guidelines is a positive step in addressing these concerns.

We were informed that the Ministry of Health has adopted the ECF and EPDS for developing its business cases for proposed capital expenditures. However, the Capital Division has not yet finalized these two draft documents, currently dated November 1999.

The monitoring and reporting of capital expenditures are briefly referred to in the ECF, but the draft reporting policy essentially provides the details. We were informed that the next focus of the Capital Division would be on the post implementation evaluation phase of the framework and the identification of lessons learned. In addition, a systematic review of capital assets in order to clearly identify maintenance costs needs to be undertaken on a government-wide basis.

A further intention is for the ECF/EPDS to eventually enhance Appendix E of the Budget Instructions which currently supports all major capital project proposals.

In addition to these documents, the policy group of the Capital Division has also drafted a proposed table of contents for a Consolidated Capital Plan Process and Policies Manual (the Manual). This draft is dated August 1999 and is reproduced in Exhibit II.1. The Manual would, in effect, consolidate all the existing instructions and policies drafted by Capital Division. However, most of its contents remain to be written and a consolidated one-source reference for sound capital project management processes within the Government of British Columbia remains outstanding.

Exhibit II.1 – Draft Table of Contents Proposed by Capital Division for a Consolidated Capital Plan Process and Policies Manual – August 1999

- 1.1 Introduction**
- 2.1 Principles, Objectives and Authorities**
- 3.1 Consolidated Capital Planning Process**
 - 3.1. Planning, Design, Construction, Occupancy
- 4.1 Roles & Responsibilities**
 - 4.1. Central Agencies
 - 4.2. Ministries
 - 4.3. Crowns
 - 4.4. Local Agencies
- 5.1 Planning**
 - 5.1. Overview
 - 5.2. Eligibility for Funding
 - 5.2.1. Capitalization/Accounting Criteria
 - 5.2.2. Equipment
 - 5.3. Long Term Capital Plans
 - 5.3.1. Purpose
 - 5.3.2. Requirements
 - 5.3.2.1. Inventory/Asset Management
 - 5.4. Capital Project Request
 - 5.4.1. Purpose
 - 5.4.2. Requirements
 - 5.4.2.1. Business Case
 - 5.4.2.2. Budget Settings
 - 5.4.2.2.1. Facility Standards
 - 5.4.2.2.2. Unit Rates, Per Diems, Other Methodologies
 - 5.4.2.3. Annual Capital Allowance
 - 5.5. Approval Processes
 - 5.5.1 Major Capital
 - 5.5.2 Minor Capital
 - 5.5.3 Emergent
 - 5.6. Alternative Financed Projects
 - 5.6.1. Business Case
 - 5.6.2. Approval Process
 - 5.6.3. Monitoring
 - 5.7. Financial Administration
 - 5.7.1. Certificates of Approval
 - 5.7.2. Provincial Treasury
 - 5.8. Cost Shared Projects
 - 5.9. Expenditure Reporting, Monitoring, & Audit
 - 5.9.1. Reporting
 - 5.9.2. Audit
 - 5.10. Capital Expenditure Reallocation Policy
 - 5.11. Carry-Over
- 6.1 Design – Social Capital Ministries**
 - 6.1. Overview
 - 6.2. Approvals
 - 6.2.1. Planning
 - 6.2.2. Completion
 - 6.3. Project Administration
 - 6.3.1. Project Building Committee
 - 6.3.2. Design Consultants
 - 6.3.2.1. Selection And Evaluation
 - 6.3.2.2. Client/Consultant Agreement
 - 6.3.3 Design and Cost Management
 - 6.3.3.1. Facility Standards & Unit Rates
 - 6.3.3.2. Cost Management Policy
 - 6.3.3.2.1. Cost Consultant services
 - 6.3.3.3. Value Analysis
 - 6.3.3.4. Pre-tender estimate
 - 6.3.3.5. 10 Day Policy
- 7.1. Construction**
 - 7.1. Overview
 - 7.2. Approvals
 - 7.3. Project Administration
 - 7.3.1. Tender Policy and Thresholds
 - 7.3.2. Project Delivery Model
 - 7.3.2.1. Stip Sum, CM, DB, etc.
 - 7.3.2.2. Pre-Qualification
 - 7.3.3. Contract Tender & Management
 - 7.3.4. Contract Management
 - 7.3.4.1. Bid Evaluation/Selection
- 8.1 Extraordinary Project Request & Projects Greater Than \$50 million**
 - 8.1. Approval Process
 - 8.2. Business Case Requirements
 - 8.3. Reporting & Audit
- 9.1 Land Acquisition and Disposal**

III. ANALYSIS OF THE CURRENT SITUATION

A. INTRODUCTION

The process of taking a capital project from the genesis of an idea through completion can be a long and complex process. Our analysis of this process, based on the lines of inquiry, examined the following key components of the process, as illustrated in Figure III.1.

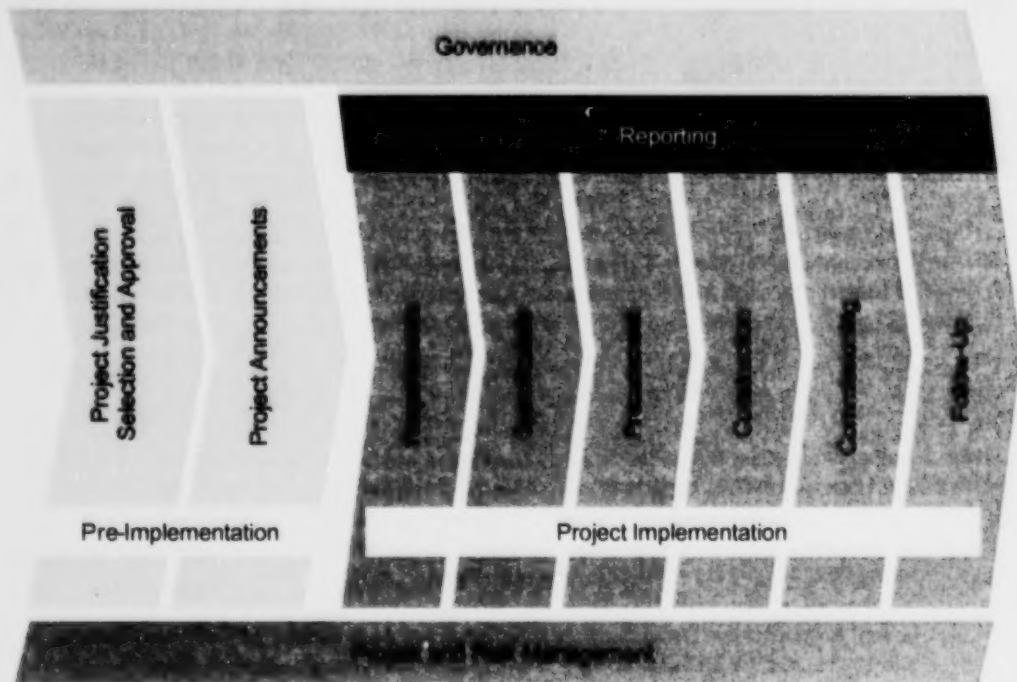


Figure III.1 – Analysis Framework

Governance – the process through which capital projects are controlled, including the clarity of roles and responsibilities and the reporting relationships necessary for the efficient and effective delivery of projects, from the idea stage through the business case development, project selection, approval and funding, the delivery of the project and the necessary reporting throughout the process.

Pre-Implementation Process – for the purpose of our analysis, this comprises capital project justification, selection and approval. This, coupled with project announcements, comprises the pre-implementation stage of our analysis framework.

Justification, Selection and Approval Process – the process through which capital project business cases are developed, prioritized and approved by both the relevant Ministry/Crown corporations and Cabinet.

Project Announcements – the process through which the public is made aware of the capital projects that will be undertaken.

Project Reporting – the means through which the appropriate stakeholders receive relevant and timely information regarding the project's progress and status to allow them to make informed decisions.

Project Implementation Process – the process through which projects are managed and delivered. This typically includes the stages of Requirements Definition, Specifications Definition, Procurement, Construction Management, Delivery/Commissioning and Follow-up as well as the associated Project and Risk Management process that is apparent throughout the entire process.

*In conducting our analysis, we examined a number of projects as outlined in the introduction of this report. It must be emphasized that the purpose of our assignment was **not** to assess the appropriateness nor provide a detailed review or audit of the individual projects. The projects were examined in the much broader context of the capital management practices of the Government and no attempt was made to evaluate the entire project. Where examples are cited in this section, they are merely illustrative of a broader issue; they are not intended to be reflective of the entire project.*

It should be noted that the framework used by the Capital Division to explain its policies and practices is similar in concept to the Deloitte Consulting framework used in this analysis. Both are supported by a body of accepted practices and conventions. As an example, the Division's identification stage (shown in Figures II.1 and II.2) embodies all of the Pre-Implementation Process of Figure III.1.

B. CAPITAL MANAGEMENT GOVERNANCE

The existing capital management process is inconsistent and varies by Ministry and program area because of significant issues surrounding governance of capital projects. Specific deficiencies include:

- Unclear roles and responsibilities between local agencies, ministries and central agencies throughout the capital management process;
- Uncertainty on the roles in capital project management between the Crown Corporations Secretariat and the Crown agencies for which it has responsibility;
- Capital management policies, procedures and documentation that are not clearly understood or followed; and
- Performance management systems that do not assign clear accountability for project outcomes or provide incentives for delivering projects successfully.

In our review of the nine selected projects, the following observations were noted in the areas of responsibilities and accountabilities:

- In many projects, roles and responsibilities were not clearly defined or communicated;
- In some cases, it was unclear as to who was responsible for crucial project elements such as: 1) needs and objective analysis; 2) feasibility studies; 3) proposals; 4) control of design and construction; and
- Although an on-site project leader or project manager was assigned in the majority of cases (e.g., by the local agency) in other projects there was either no project manager at times due to personnel changes, or no project manager had been assigned.

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Illustrative Examples

- *Within the Province of British Columbia, overall responsibility for the acquisition, building and maintenance of school facilities is assigned to the individual school districts. Roles and responsibilities of the school districts, the Ministry of Education and the Ministry of Finance and Corporate Relations are clearly established, communicated and followed.*
- *In the area of health, these roles are not as clear: for example, with regards to the current building project at the Vancouver General Hospital, it appears that there is lack of definition and communication of roles and responsibilities.*

- *In the Ministry of Health there is a backlog of capital projects in the system which has contributed to a significant gap between the current capital base and the identified capital need. One of the issues identified in the health area as an inhibitor to the process is a lack of understanding and acceptance of the recently revised governance model and, more specifically, the roles and responsibilities of the various participants in the planning process. As noted elsewhere, there are numerous players at various levels who are involved in the process (ministries, regions, districts, etc.). Most participants appear to agree that the process needs to be streamlined.*

The implementation of health projects is seriously impacted by time delays. These delays have resulted, in part, from the governance issues previously discussed. Other contributing factors include:

- *Inadequate project justification and selection;*
- *Lack of communication of goals and objectives, form of plans, etc.;⁴*
- *Continuous personnel turnover; and*
- *Lack of sufficient front-end analysis or adequate business cases. This results in the Ministry of Finance and Corporate Relations having to perform more in-depth analysis at later stages; in part, this is due to a lack of funding in the early stages of planning and the absence of accepted standards for estimating costs and preparing business cases.*

These project delays have resulted in a number of conditions, including:

- *Increased project costs (significant delays result in original cost estimates being outdated due to changes in needs, technology, building codes, maintenance requirements, people, etc.);*
- *Increased operating costs (due to deferred or reduced maintenance on older assets which are expected to be replaced or reduced efficiencies due to relying on older assets beyond their expected life);*
- *Underspensing of amounts approved for projects because of delays in the commencement or the progress of these projects; and*
- *Inability to deliver programs and services as planned.*

The current planning process was introduced in 1998 and has not yet been fully implemented by all interested parties. This accounts for the lack of understanding at some agencies.

⁴ The lack of communication referred to above creates frustration and ultimately adds to time delays and inefficiencies. There currently does not seem to be an understanding by all of the involved parties as to what the rules are and who is setting them. The complex nature of the issues and the various agencies involved contribute to this issue within the Ministry of Health. This matter is being addressed, at least in part by the new Ministry of Health planning documents.

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As the Government frequently chooses to implement large (potentially billion dollar) projects through Crown corporations (either existing or specifically created for the project) the area of capital management governance is of particular importance.

As described in Section II, in the Government of British Columbia, there is currently no general legislation completely covering Crown corporations governance and accountability issues for capital project management and direction. While CCS has developed policies on Crown governance, the absence of general legislation means that there is no single source for defining these topics for capital projects in Crown corporations.

The two most important pieces of legislation affecting Crown corporations, namely the *Financial Administration Act* (FAA) and the *Financial Information Act* (FIA), are limited in the issues they address. For instance, neither Act clearly articulates the role of central agencies with respect to monitoring and reviewing the capital management activities of Crown corporations. Even where the legislation addresses roles at a general level, the limits of authorities and responsibilities for crown projects are often not specified.

There are a number of central agencies involved in different aspects of the activities of Crown corporations and coordination of their efforts is an issue. Treasury Board staff, the Office of the Comptroller General and the Crown Corporations Secretariat all have oversight responsibilities of Crown corporations. Because roles and responsibilities are often unclear, they can and do become blurred and duplicated. To deal with the uncertainties and ambiguities, a collection of authorities, upon which central agencies rely to carry out their oversight responsibilities, has evolved with time. Despite this general collection of authorities, roles and oversight responsibilities remain unclear.

The roles and responsibilities of those parties involved in Crown corporations governance are clearer in other jurisdictions. For instance, at the federal level, the *Financial Administration Act*, Part X, deals with governance and accountability matters of Crown corporations. Part X sets out a comprehensive framework of roles and responsibilities and clarifies the roles and responsibilities of those parties involved in Crown corporation governance. For example, Part X of the federal FAA articulates a role for Treasury Board in Crown corporation governance. While the language in the federal Act remains broad, it does set out clear roles and responsibilities for those parties involved in Crown corporation governance.

In summary, with regards to Crown corporation governance, roles are unclear and the monitoring regime generally weak. The current legislative framework has not established appropriate oversight provisions for central agencies. Non-commercial Crown corporations are managing billions of dollars in capital funds within a governance environment that is inadequate.

C. CAPITAL MANAGEMENT PRE-IMPLEMENTATION PROCESS

1. *Capital Project Justification, Selection and Approval Process*

When a capital project is put forward it goes through a process of definition, business case development and prioritization against other projects leading to approval of the project for inclusion in the ministry's CPR. This prioritization should balance the financial, social and economic factors identified in the project business case as well as the project's strategic alignment with the policies and directions of the Government and ministry. We note, for example, that the CCS has issued Multiple Account Evaluation guidelines that encourage consideration of "societal goals", environmental impacts, public service, etc. The result of this process should be a defensible, prioritized list of projects permitting ministries and Crown corporations to understand why certain projects are proceeding and others are not.

Despite these requirements, we observed several issues in the selection process of capital projects. The ministries' needs were frequently not defined, documented and refined in the "conceptual stage", prior to project commencement. An examination of business cases prepared shows many did not seem to address all potential influences on the project, such as legislation, constraints and other risks (e.g., environmental, socio-economic, etc.). The absence of good analysis and justification raises questions in the approval process resulting in delays. Across ministries and Crown corporations, there are a variety of approaches used to select projects. Some are quite effective, some are not. We noted that information analysis, prioritization approaches and decision-making related to capital spending are also inconsistent across ministries.

Illustrative Examples

- In the Ministry of Education, the prioritization process for the construction of new schools is based on an assessment of alternative options (build new vs. expand/refurbish existing), an analysis of demographic trends, the age of the current facilities and regional initiatives established by the Government. Within this process, however, further communications would likely be useful regarding how the non-financial factors are incorporated into the decision-making process, and how the projects fit into the Long-Term Capital Plan.*

- The selection process⁵ in the Ministry of Health is currently being revised due to problems associated with the definition and communication to the various agencies that were called upon to submit capital plans and requests. Most of the issues surrounding capital projects seem to exist in the front-end of the process, including the identification of capital needs. The identification of needs necessitates an understanding of the current condition of each capital asset, which until now has not been available in the Ministry due to the absence of a consistent and reliable capital asset inventory database.⁶*

Another requirement in the early planning stages is the use of a communicated, standard business case model.⁷ Consistency in this stage of the process will assist the Ministry of Health to compare and rank competing projects consistent with both its goals and those of the Government. Of particular importance is the different ways that risk was (or in some cases was not) factored into project justification.

⁵ Documents prepared in January and February 2000 for implementation in 2001/02 outline a new process in the Ministry of Health. If implemented and followed, the new practice should begin to alleviate these issues.

⁶ The new process recognizes the need for a capital inventory and assessment system and outlines the creation of the Health Capital Assessment and Planning System.

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- *In 1995, the requirement for a mass rapid transit system for Vancouver had been identified and the decision to use light rail transit (LRT) was made and presented through BC Transit and the Crown Corporations Secretariat. In December 1997, a Project Office was created with a mandate to review and confirm the assumptions and costs of the LRT. Further investigations and studies were undertaken. Concerns were raised about the costs and feasibility of LRT as previously conceived. We were informed that original assumptions on LRT could not be supported. In May 1998, the concerns of the Project Office were raised with the Planning and Priorities Committee of Cabinet and management of the Project Office was informed to prepare a more detailed analysis package and return to the Committee for further discussions. We understand that, at this Committee, the benefits of the SkyTrain technology and the receptiveness and potential for a competitively priced procurement from Bombardier (the owner of this proprietary vehicle technology) were discussed and an approach was approved.*

Later in May 1998, the potential switch from LRT to SkyTrain technology became public knowledge. At about the same time, the proposed Memorandum of Understanding (MOU) with Bombardier was announced. The Cabinet Committee on Crown corporations and Cabinet subsequently approved the proposed Bombardier MOU and the SkyTrain extension project.

Without debating the merits of the assessments and decisions, the normal project approval process was accelerated or shortcut. Also, the announcement of a proposed MOU created expectations in advance of Treasury Board approval.

The transition from project concept to requirements definition and, in some cases, to procurement and then to an actual project occurred very quickly. Many key project management processes and controls for construction were needed in the early stages of this project. The subsequent actions to review the operations of the Rapid Transit Project Office lead to numerous recommendations for reporting and risk management that have been implemented.

The inconsistencies in these processes across ministries result in submissions to Treasury Board that are equally inconsistent in nature. While some ministries submit capital plans that are in line with the Capital Expenditure Limits (CELs) outlined in the Treasury Board Budget Instructions, other ministries submit plans that exceed the CELs, in some cases by up to 100%. This creates problems for Treasury Board staff and delays the capital budget process as they are forced to return the plan to the ministry for revision. The alternative for Treasury Board is to draw a line through the list of projects at the CELs stage because no additional funding is expected.

We noted that links between capital budgeting and planning, operational budgeting and planning as well as capital management are weak and fail to achieve an appropriate balance between program requirements and CELs; (a similar observation was made by the Budget Process Review Panel).

A related issue was noted regarding the ability of Treasury Board and Cabinet Ministers to make the necessary trade-offs and strike an appropriate balance among the financial, economic and social impacts of capital expenditures between ministries. CCS had issued general guidelines for crown projects; the compliance with the guidelines appears inconsistent and the authority of CCS to mandate practices is unclear. In times of fiscal restraint, during which most of the budget for capital projects may be debt financed, it is imperative that there exist a framework to allow projects to be rationally evaluated and their alignment with the strategic objectives of the Government be assessed. Such a framework does not appear to be in place.

One of the factors supporting such a framework would be sufficient and consistent information for each project to permit discussions of the merits of each project. At present, the information provided with projects is either incomplete or insufficient to make trade-offs between ministries.

There were two further issues identified that are related to the process of project prioritization and approval.

Firstly, in some cases, there were projects put forward with business cases that did not address adequately the impact of the project on the operating budget in future years. As a simple example, if a new road is built this year, the need for snow removal, road maintenance, etc. must be factored into the operating plan for the future. Similarly, if a project is implemented on the basis of future cost-reductions, the future operating plans should reflect the expected improvement in efficiency. Failure to address this in the project business case could result in construction of an asset without the corresponding fiscal ability to support its operations in future years.

Further, there is a lack of capital or fixed-asset inventory systems within some of the ministries reviewed. Without the ability to accurately assess the age and condition of existing facilities and equipment, ministries and Crown corporations are hampered in their ability to carry out effective long-term capital planning for maintaining or improving their asset base.

Illustrative Examples

- *School districts complete project budgets based on standardized cost estimates prior to submissions of the project to the Ministry of Education. Unit rates are used for initial cost estimates. The unit rates have not been updated since early 1998, and thus may not reflect current building code requirements and future school needs/designs.*
- *For the Vancouver Trade and Convention Centre expansion, the project's objectives were clearly documented, presented and approved; however, the project ran into difficulties due to several issues including:*
 - *a decision to proceed without final cost determination and federal government involvement; and*
 - *lack of clear ownership and funding structure at the outset.*
- *Through our review of the Port Mann Bridge project and through discussions with officials from the Ministry of Transportation and Highways, which delivers highway projects on behalf of the BC Transportation Financing Authority, we noted that the timeliness of approvals was of particular significance in the construction of such projects due to the influence of weather conditions on construction.*

2. Capital Project Announcements

An issue that has generated obvious frustration for both MLA's and Government officials is the timing of project announcements. If sufficient analysis has not been conducted to develop the scope and budget estimates with the level of accuracy necessary to build the project into the CPR, there will be a time delay before the project can be approved and 'officially' announced. If approved, projects must go through the necessary stages (planning, design, environmental assessments, funding arrangements, etc.) before there are any tangible results visible to the public. These time delays reinforce the public's perception of a slow-moving, inefficient government.

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D. CAPITAL MANAGEMENT REPORTING PROCESS

As a project proceeds through the various phases of implementation, a key element of project management is status reporting of both the physical progress and the financial status of the project. In our review of reporting practices, we focussed on the construction phase of the selected projects.

Our review indicated a risk that the level and quality of reporting that is currently provided on the progress of major government capital projects is lacking in that it does not clearly provide identification of problems and potential problems. Senior government officials may not be receiving appropriate and timely information in order for them to make informed decisions on how well projects are proceeding.

We recognize that capital project information and data collection is currently being carried out on a regular basis in all Crown corporations, ministries and local agencies. However, the reporting of this information is:

- inconsistent across entities;
- in some cases, duplicated amongst central agencies;
- considered to be inadequate by the central agencies; and
- considered to be burdensome by the reporting agencies themselves.

As noted earlier, guidelines have existed since 1995. However, the reporting requirements emphasized cash flow reporting against a limit with little comparison of budgets against actual progress. Problems could not be identified in a timely fashion under this regime of reporting. The central agencies essentially relied on the reporting agencies to come to them with problems.

The above mentioned reporting issues have arisen, primarily, as a result of weaknesses in the existing framework for capital project reporting, as opposed to poor financial controls and systems. In our view, the central agencies are not providing appropriate guidance to government ministries, local agencies and Crown corporations regarding reporting expectations on the progress of capital projects in order to provide sufficiently detailed analysis on each project as to actual status as compared to budgeted costs and schedule.⁸ Requirements remain fragmented and without proper guidance or instructions.

Furthermore, unnecessary duplication in reporting requirements is apparent and should be avoided. The creation of a central database would eliminate this redundancy, while accommodating the needs of a government-wide reporting policy. The level of control exercised by the central agency is crucial, but the accountability to bring a project in on budget and on time should rest with the ministry, local agency or Crown corporation.

The lack of an independent review and sign off of information has also been noted. Such reviews and sign-offs are key to validating the data contained therein and any costs associated with such reviews should be allocated appropriately.

As a result, there is a need to release a reporting policy to social capital ministries and Crown corporations which is to be part of an overall consolidated capital project management framework. However, the level of reporting would depend upon the classification of each project.

A reporting framework will facilitate better control of capital projects and will enhance the ability of government to identify and manage associated risks. It will provide increased visibility of control by the Government, helping to minimize stakeholder concerns.

⁸ We note that the Budget Process Review Panel made somewhat similar observations and we understand that its recommendations are being considered by the Government.

Sound capital project reporting should begin with the on-site project manager. As each major project is unique in size and scale, different reporting formats and detail are appropriate depending on risk. Central agencies should issue principles or minimum standards for implementation reporting, but there should be flexibility to adapt the principles to particular circumstances.

There may be resistance on the part of some local agencies to have reporting requirements imposed upon them, particularly those with a good track record of managing capital projects. However, it is unlikely that a Central Agency would require more than the on-site manager already needs. Therefore, the use of existing reporting should be utilized to the fullest extent possible.

Consequently, in order for such a reporting policy to be successful, the reporting agencies need to be involved in the development of a reporting policy and should be part of the consultative process as policy is drafted.

The results of our review of the nine selected capital projects reveal that reporting was relatively weak and inconsistent across the majority of projects reviewed. In some cases, reporting is only conducted once a problem is detected. Reporting varies from projects with excellent reporting of milestones achieved, budget variances, issues and problems to those that report on an exception basis (i.e., a problem as defined by the project manager) to those with little project reporting to the governing body.

We noted a lack of a reporting framework and guidelines by which ministries and Crown corporations are expected to report to their own Ministers and boards of directors. Similar concerns were expressed by the Auditor General of British Columbia as a result of his review of the Fast Ferries Project; in particular, the lack of an appropriate reporting structure.

Illustrative Examples

- *Rapid Transit Project 2000 Ltd. (SkyTrain extension) is apparently the only government entity that is implementing earned value management (EVM) reporting, and has just recently released its first draft EVM report. Rapid Transit Project 2000 management has added this approach to its monthly project reporting. The key stakeholders are kept regularly informed on the progress of the project through project status reports.*
- *In the case of the North Fraser Pretrial Centre, capital budgets were generally well prepared and future projections of operating costs were developed. Reporting to the appropriate Ministers occurs only if a problem, a material change in scope, or a cost increase occurs. In general, financial reporting appears adequate; however, the overall monitoring of costs and budgets needs improvement.*

E. CAPITAL MANAGEMENT IMPLEMENTATION PROCESS

Our review of the nine capital projects has identified the need for *consolidated* standards, policies, guidelines and processes, which should be implemented and followed for all capital projects. This is not suggesting that the current Government does not follow policies and guidelines with respect to capital management implementation. The issue is that each agency, ministry and central agency has their own framework, which they use and apply to capital projects. This can lead to burdensome reporting requirements, confused objectives and unnecessary use of resources.



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There should be a single source of reference that can be used as a guide and performance measurement tool. This needs to be coordinated by the key stakeholders. It may represent basic requirements and a high level statement of principles and policies. While the detailed procedures could be set out by the local agencies, the overriding principles would be prescribed by the Government's central agencies.

Once a project is approved and funds are allocated, the implementation of the project follows a series of steps, no different than a project executed in the private sector. These steps are typically:

- Requirements Definition;
- Specifications Definition;
- Procurement and Construction;
- Delivery/Commissioning; and
- Follow-up.

Concurrent with these steps are the associated project and risk management of the capital management implementation process. The analysis and illustrative examples in this section are based upon the elements and sample questions outlined in our lines of inquiry (Appendix A).

Project and Risk Management

In the majority of projects reviewed, we found that information was adequately communicated to the relevant decision-makers. The content of the information and reports, however, did not always meet the needs of those decision-makers. In some instances, the information was either too abundant or too sparse.

Management continuity throughout the projects' life cycle seemed reasonable in the majority of cases, but the health portfolio of projects appears to have frequent turnover on project management. Associated problems were detected in projects in which continuity was broken. Similarly, rotation of Capital Division analysts assigned to the project by the MFCR was also found to be disruptive.

Of the nine projects reviewed, all eventually received the appropriate approvals. We found that the individuals managing the project information were qualified and competent; budgets and schedules were prepared. Further, in most instances we noted that appropriate financial and other controls were in place. However, risk profiles were rarely created.

Illustrative Examples

- *The Smithers Secondary School project was carefully planned and scheduled. Reviews and approvals were provided by the Ministry of Education and the Ministry of Finance and Corporate Relations and the budget process appeared to be tightly controlled. Where needed, external expertise was retained to ensure that the project was cost effective.*

- *In the SkyTrain extension project, qualitative risks have been identified and the degree of severity and probability of occurrence of these identified risks has been assessed and responsibilities have been generally assigned. Furthermore, a quantitative risk assessment has been performed through the calculation and monitoring of pressures on contingencies with values having been defined through the collection and assessment of pertinent information.*

In addition, budgets are prepared, justified, recast and submitted to the proper authorities for review and approval. Although not explicitly identified, "hard cost" escalation allowances are implicit in the budget cost estimates. Furthermore, costs associated with mandatory compensatory items such as environmental mitigation and expropriated lands have been included in the budget.

Other items, such as bus loops, are not included in the budget because various cost sharing agreements with stakeholders are in place, or are currently being negotiated, to pay for them. These items may be outside the current mandate of the SkyTrain extension project.

At the time of our review, the project, as defined within the \$1.167 Billion budget, was potentially four months over schedule, reportedly due to delays attributable to such items as environmental approvals and railway lands access. Mitigation measures reportedly have been taken to recoup or minimize this slippage.

We were informed that the contract reserves and the remaining baseline contingency should be sufficient to cover any anticipated claims or extras arising from real or perceived increases in the contractor's scope of work or claims arising from delays. However, since these costs have not yet been fully quantified, the impact on the existing budget has not been fully determined. We were informed that management is currently in the process of analyzing contractors' claims, and that all but one anticipated delay claim have been resolved.

At present, these claims, along with the sensitivity to interest rate fluctuation, are the largest visible sources of potential cost impact on this project.

As with any construction project, if such costs impacts are realized and exceed the available contingency, the budget may have to be increased or the concept scope narrowed to meet the budget. The Project Office has conducted a value analysis on the SkyTrain extension project.

A system of quality control is evident in this project and non-conformances are addressed.

Requirements Definition

The program objectives were found to be clear and program requirements reflected these objectives. Project cost estimates were generally broad at the outset of the project, but were continuously refined as the project progressed. Appropriate analysis was performed by the agencies and presented to key decision makers.

There should be a single source of reference that can be used as a guide and performance measurement tool. This needs to be coordinated by the key stakeholders. It may represent basic requirements and a high level statement of principles and policies. While the detailed procedures could be set out by the local agencies, the overriding principles would be prescribed by the Government's central agencies.

Once a project is approved and funds are allocated, the implementation of the project follows a series of steps, no different than a project executed in the private sector. These steps are typically:

- Requirements Definition;
- Specifications Definition;
- Procurement and Construction;
- Delivery/Commissioning; and
- Follow-up.

Concurrent with these steps are the associated project and risk management of the capital management implementation process. The analysis and illustrative examples in this section are based upon the elements and sample questions outlined in our lines of inquiry (Appendix A).

Project and Risk Management

In the majority of projects reviewed, we found that information was adequately communicated to the relevant decision-makers. The content of the information and reports, however, did not always meet the needs of those decision-makers. In some instances, the information was either too abundant or too sparse.

Management continuity throughout the projects' life cycle seemed reasonable in the majority of cases, but the health portfolio of projects appears to have frequent turnover on project management. Associated problems were detected in projects in which continuity was broken. Similarly, rotation of Capital Division analysts assigned to the project by the MFCR was also found to be disruptive.

Of the nine projects reviewed, all eventually received the appropriate approvals. We found that the individuals managing the project information were qualified and competent; budgets and schedules were prepared. Further, in most instances we noted that appropriate financial and other controls were in place. However, risk profiles were rarely created.

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Illustrative Examples

- *The Smithers Secondary School project was well documented and the project objective and needs analysis were properly approved. Project selection was based on objective criteria set by the Ministry of Education.*
- *In our review of the Kelowna Cancer Centre, we found that the requirements for the Centre were determined by the Cancer Agency and confirmed by the Ministry of Health. Some high level socio-economic and environmental impact assessments were conducted.*
- *In the case of the Port Mann Bridge project, a feasibility study was conducted prior to the initiation of engineering. The project's objectives were part of the long-term traffic plan, but a formal business case analysis was not conducted prior to project approval.*

Specifications Definition

In most cases an adequate options analysis was conducted and submitted to the appropriate authority, including clear and relevant information.

Feasibility studies were not always undertaken on the options identified through the options analysis. Furthermore, potential constraints were not always identified at an early stage and life cycle costs were rarely considered. Since life cycle costs were not considered in most of the projects reviewed, they were not considered as a basis for concept design and for evaluating concept design alternatives, nor were they estimated for the evaluation of design alternatives.

Illustrative Examples

- *An options analysis was conducted for the North Fraser Pretrial Centre by independent analysts. In addition, our review found that the traditional way of handling projects was challenged in favour of more effective methods. Costing and budgets were revised to reflect the progression of the project.*
- *In the case of the Technical University of British Columbia, the options analysis on the location of the university was limited to selected regions of the Lower Mainland/Fraser Valley. More time should have been spent prior to the final site selection to determine the most suitable type of building and space configuration for the university. A "buy versus lease" analysis was conducted; however, a more detailed assessment of life cycle costs and operating costs would have been valuable.*
- *Of particular concern at the Royal Jubilee Hospital is the fact that the original estimates were old and had increased with the passage of time due to changing needs, technology, building codes, personnel, etc.*
- *In the case of the Smithers Secondary School, the School District, the Ministry of Education and the Capital Division were involved in the design analysis to ensure consistency with project objectives. Subsequent to approval, extensive design and value analysis was undertaken by the Capital Division to ensure that the design was cost effective. During the process, outside experts were retained to perform design and cost analysis, with input from the School District and the Capital Division, to ensure needs were met within budget. The project was required to be designed and costed before it was put out for tender.*

- In the case of the Vancouver Trade and Convention Centre expansion, the unique features of the site resulted in significantly higher costs, complexities and constraints than foreseen in the proponent's original proposal document. The expanded facility was to be built largely over water which required several permits and extensive and expensive marine geotechnical investigation before the costs could be finalized. In addition, the site was to incorporate the existing convention facility, the moving/construction of the sea bus terminal and the construction of a new hotel and retail development. This involved lengthy negotiations and cost sharing arrangements with several parties. As a result, the project's estimated cost continued to increase as more design work and negotiations were completed. An Independent Evaluation Committee reviewed the initial design and cost estimates in the proponent's proposal and the results were reported to Treasury Board. In addition, Treasury Board was kept informed of the project status and cost estimates with regular meetings, reports and updates. The final project definition report detailing design schedules and budgets was not completed until August 1999.*

Procurement and Construction

Contracting is based on inter-ministry policies, directives, guidelines and regulations. However, there is no overriding policy to which all ministries are subject. Nevertheless, we found that the procurement process was appropriately carried out. Management of the construction process generally was in accordance with legislation and government regulations. Although controls were not reviewed, it appears as if appropriate financial controls are in place to ensure that payments are properly made. Generally, we found appropriate plans and systems of quality assurance.

Illustrative Examples

- In health care projects, there is currently a very complex process in place for the payment of project expenses. All invoices must pass the scrutiny and approval of the managing consultant, the Project Building Committee and the Ministries of Finance and Health. When the certificate of approval for payment is issued, it is sent to the Health Facilities Association, a society run by the Ministry of Health, and payment is then made to the facility or project operators. This process results in significant delays in payment of contractors and other project suppliers.*
- The North Fraser Pretrial Centre carried out effective procurement and construction processes. Independent consultants were used to conduct value analyses and industrial benefits were considered. Appropriate project management policies (British Columbia Buildings Corporation) were being followed for construction management.*
- The SkyTrain extension has both sole-sourced and competitive contract procurement. The general concern with sole-sourced contracts is that they may result in higher costs. The significant sole-source contracts were for the electrical and mechanical system, and the SkyTrain cars. Although Bombardier has proprietary rights on SkyTrain technology, other procurement options were explored. Management negotiated the Bombardier contract and independent opinions confirmed the reasonableness of Bombardier's price and risk allocation. Other contracts for the guideway, special structures and other elements were awarded through a competitive proposal/tender process.*

A significant item still pending is an agreement on the operations and maintenance contract. Although these costs will be Translink's eventual responsibility, proceeding without this agreement in place represents major cost risk.

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Delivery/Commissioning

Many of the projects reviewed have not yet reached the delivery phase. Some of the projects that have reached this phase did not have a formal plan in place to conduct quality reviews. The remaining projects appeared to have contemplated an informal mechanism, such as asking the Capital Division to perform this function.

Nevertheless, there is no standard in place which requires an assessment of the projects' compliance with performance and engineering specifications.

Illustrative Examples

- *Projects funded by the BC Transportation Financing Authority are administered through project funding agreements, which have formal change request processes. In the case of Ministry of Transportation and Highways projects, quality assurance audits are conducted to determine if delivered capital assets meet all specifications. There is usually a one-year warranty on the asset. Contracts generally include a clause allowing the levy of penalties for late delivery.*
- *The North Fraser Pretrial Centre is an innovative concept. Plans are in place to have an independent consultant assess, upon completion and during the facility's operations, the project's compliance with performance and engineering specifications.*

Follow-up

The Capital Division's policies encourage follow-up on project occupancy and completion. Of the projects reviewed, very few appeared to be planning for debriefings and performing follow-up evaluations. As a result, techniques used and lessons learned would not be discussed or documented as a reference and tool for future projects.

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IV. FUTURE CAPITAL MANAGEMENT FRAMEWORK

Through our analysis of the current situation, discussions with key stakeholders and research into best practices, we have developed a framework for how capital management should function in the future. The following section presents our guiding principles for the future. This section is followed by a discussion of some of the key attributes of the guiding principles and a presentation of some best practices.

A. GUIDING PRINCIPLES

We envision an integrated capital management process that effectively and efficiently manages the financial resources of the Government to enhance the accountability and integrity of the use of public funds for these projects. The guiding principles that underlie the future capital management process within the Government of British Columbia are:

- All government capital projects will be subject to the same capital management accountability framework.
- The capital management processes will be structured, disciplined and understandable.
- There will be clear responsibilities and accountabilities, with Treasury Board playing a strong central role in overseeing the process.
- There will be more rigour in the pre-planning phase of projects.
- Capital projects will be justified with sound business cases that assess the financial, social and economic impacts of the project. Other aspects such as service to citizens, environmental implications, etc. could be included.
- Project management and project reporting models will be based on project cost and risk.
- All projects will follow the same reporting models, based on complete, accurate and timely information reported to Treasury Board.
- Agencies will be accountable for delivering projects on time and on budget.

This process creates value by supporting decision makers at all levels through the provision of comprehensive, relevant and timely information and advice that strategically links the allocation and use of resources to Government programs. These principles are amplified in the sections below. Following these discussions is a summary of some of the best practices from our research that support the future direction and a discussion of the implications of this future direction.

B. FRAMEWORK ATTRIBUTES

In the future model, there should be a single, integrated capital management process that clearly defines the roles of central agencies, individual ministries and local agencies. As all projects are funded through debt guaranteed by the Government, the application of the framework envisions no differentiation between projects. Treasury Board would retain the right to grant exemption or exclusion e.g., for selected commercial corporations' projects.

The Minister of Finance and Corporate Relations through Treasury Board ministers in their capacity as 'the banker' will retain the right to impose certain conditions on the project (e.g., an acceptable project manager) prior to granting its approval and will also establish reporting requirements based on a project's cost/risk profile. Mechanisms will exist to ensure that the capital management policies and guidelines that are established are followed and that exceptions are appropriately documented and acted upon.

Consistent with the 'banker model', we do not see Treasury Board staff having a role in project implementation. Rather, we see strengthening their monitoring role. Implementation of projects in the future framework is the responsibility of the project or facility "owner" (e.g. the local agency or Crown corporation).

Projects put forward for consideration and eventual implementation will follow a standard approach to business case development. A part of this process will include documenting the expected financial (both present capital and future operating costs/benefits), social and economic impacts of the project.

The project business cases will help the ministries and the Crown corporations in establishing their own capital project priorities using their own prioritization frameworks. Comparisons of capital expenditures (i.e., at the Treasury Board and Cabinet level) can draw on summaries of the financial, social and economic impacts included with the business cases.

Projects will go through a multi-phase approval process and this process will be linked to the release of funds for the project. This 'creeping (or incremental) commitment' will help to ensure the project is on track before it obtains further funding, or allow Treasury Board to re-evaluate its funding decision if there are uncertainties that are not being addressed. A significant milestone in the process is the stage at which the project has been formally approved, and a public announcement can be made.

Consistent with the philosophy of treating ministry and non-commercial Crown corporation projects in a consistent manner, they will have equivalent reporting requirements in the envisioned framework. There will be mandatory status reporting to Treasury Board staff on all projects on a regular basis.

Project reporting requirements will be based on project classification. Certain projects (e.g., high cost, high risk, aggressive schedule) will have more onerous reporting requirements than low risk projects. Value management/earned value concepts will be implemented as a key part of project reports.

Ministries, agencies and on-site project managers will have access to all information reported to Treasury Board. Wherever possible, variations of report formats will be minimized depending on project size, scope and risk. Reports for different agencies will be drawn from common data sources. Thus we envision that the reporting should not be significantly different than that needed by the on-site management team.

Performance reviews will be linked to the successful on-time and on-budget delivery of a project.

One of the characteristics of the future framework is a reduction in cycle time for projects. This will be achieved through standard implementation approaches and standard policy/guidelines. Both will reduce the need to 'reinvent the wheel' on a project-by-project basis. Our framework envisions an environment in which the experiences and lessons learned from a project are captured in post implementation reviews and passed on to subsequent projects.

C. BEST PRACTICES

In other jurisdictions, both public sector and private, leading organizations have decision-making processes in place to help them assess where they should invest their capital for the greatest benefit. The framework for these decision-making processes includes:

- Business Cases;
- Review and Approval;
- Project Ranking and Selection;
- Project Reporting; and
- Project Implementation.

Business Cases, supported by payback or net present value calculations, draw attention to cash flows associated with potential investments. In addition, they also consider the strategic fit of the investment with the organization's overall goals including social and economic benefits as well as a risk analysis of the project.

A *Review and Approval* framework ensures the appropriate level of attention is directed to each project, resulting in decisions that are made more efficiently and are supported by better information. Some leading organizations have review processes in place that determine the level of analysis and review that will be conducted based on the size, complexity, and cost of the project. Projects that are crucial to the organization's strategy, are of high cost, or span several years usually require more analysis, support, and review than projects that cost less, have shorter time frames, or have less organization-wide impact.

Using defined *Project Ranking and Selection* processes creates an environment in which it is understood which projects were selected and why.

In developing best practices for *Project Reporting* with which we could compare the proposed draft reporting policy, we combined our own professional experience in project management consulting with a review of existing international project management best practices and theory, including information requirements expected by a bank/lender. The best practices of sound reporting enabled us to review and critique the proposed draft reporting policy.

In addition to general principles, there are three essential components of a sound reporting policy: reporting needs; reporting plan and report types. The general principles of a sound reporting policy are:

- Simplicity and Clarity
- Accuracy and Completeness
- Timeliness and Frequency
- Transparency and Revision
- Continuity

In order to develop appropriate reporting requirements, it is essential that reporting needs are clear, and that they reflect the nature and organizational structure of the project. Essential components of the needs assessment are:

- determining reporting needs,
- establishing an appropriate level of reporting, and
- creating minimum reporting requirements.

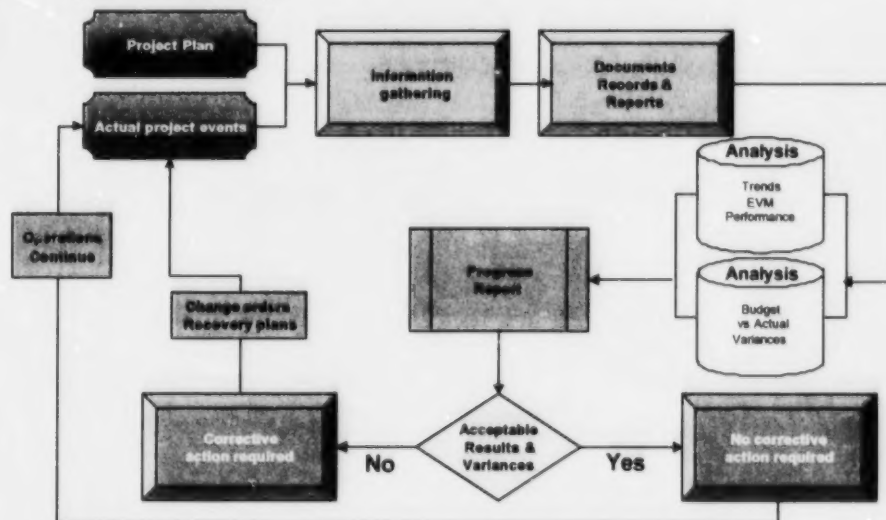
Once reporting needs have been determined, it is important to formalize the needs and determine how these needs can be met. This can be done, through the creation of a reporting plan. A reporting plan sets out the functional components of reporting such as reporting mechanisms, resources, formats, timing, etc. in order to ensure that reporting objectives can be met.

The last component of our reporting best practices is report types. This area is actually determined within the reporting plan. However, since report types as well as their content are a substantial determinant of the success of a reporting policy, we have treated this area independently of the reporting plan.

The following cycle of reporting (Figure IV.1) has been developed to illustrate the need to using reporting as a means to contain and control a project. The success of the reporting cycle is the timeliness of reporting and the timeliness of the response to the findings and analysis of reports.

In order to maintain project control, the information gathered and integrated into a report must be current to ensure analysis is conducted on the most relevant information. The longer the time required to complete the reporting and control cycle, the longer a potential problem is left unattended, fostering a situation whereby new, related and non-related problems may develop.

Figure IV.1 – Cycle of Reporting



Further details for the best practices for reporting information on capital projects are provided in Appendix C.

In order to compare and expand on the Government's *Project Implementation* framework, we have developed sound project management principles and standards. These principles and standards are a consolidation and selection of international generally accepted project management knowledge and practices. Our resources include, but are not exclusive to: the Project Management Institute; the Canadian Institute of Quantity Surveyors; the AACE International (Association for the Advancement of Cost Engineering); and other leading international engineers and project managers in the field of construction management. As an example of best practices, the Project Management Program for the British Columbia Building Industry, an affiliate of the Project Management Institute, is in the process of developing a practice manual for capital projects in British Columbia. This group's contributors include architects, engineers, construction contractors, procurement specialists and facility managers in British Columbia. An

exposure draft is anticipated for release by December 2000. We noted that the proposed table of contents is very comprehensive and could serve as another guideline for the Government.

In addition, we conducted a general review of the capital project management processes and policies with regards to the establishment of best practices and a framework for capital projects of the Governments of Alberta, Ontario, the United Kingdom, the United States, Ireland, Australia and New Zealand. Of the seven jurisdictions, five demonstrated leadership in the areas of best practice development as follows:

- The Province of Alberta has a Project Administration Manual in place for infrastructure projects.
- The United States General Accounting Office has developed an "Executive Guide: Leading Practices in Capital Decision-Making" which includes standards, policies and case studies.
- The United Kingdom Audit Commission has developed best practices for the "Local Authority Management of Capital Projects" entitled "Just Capital".
- The Auditor General in New Zealand has developed and issued "best practices" for capital projects, which it uses to evaluate all capital projects.
- The Office of Public Works in Ireland is currently working towards ISO accreditation, which may be something that the Government of British Columbia may wish to consider in the future.

Using the UK best practices as an example, we have listed some of the key areas below which the UK Audit Commission has deemed significant and which we believe are of particular relevance to the Government's capital management processes.

- Projects should meet clearly specified service needs.
- Project teams should understand each other's roles.
- Authorities should allow enough time for design and avoid making late changes.
- Value for money is more likely to result if a clear procurement strategy is agreed, the risks assessed and costs and methods benchmarked.
- Projects should be monitored closely so that they are completed on time and within budget.
- All projects should be reviewed to see what lessons can be learned.

The underlying principles and practices for capital project management upon which our recommended framework is based, is outlined in Appendix D. They are developed from numerous best practices.

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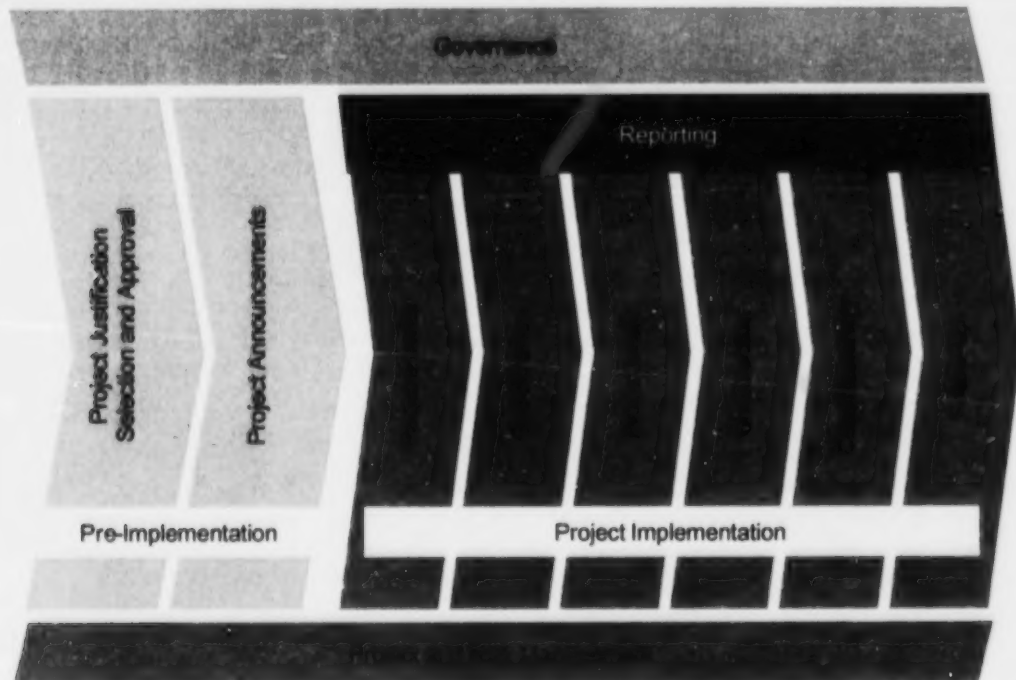
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V. RECOMMENDATIONS

A. INTRODUCTION

Through an examination and analysis of the current situation as outlined in Sections II and III, a future framework was recommended in Section IV. Section V presents the recommendations that will enable the Government to move towards this future framework. Figure V.1 depicts this framework and its components.

Figure V.1 – Recommendation Framework



Most of the difficulties that we observed were in the pre-implementation stage and the early parts of project implementation.

In the future framework, we are proposing major improvements in the activities involving pre-implementation and requirements definition; activities that take place early in the project life cycle. In some areas, our recommendations build on current activities or previous attempts to make improvements. One of the significant differences in our approach, however, is the recommendation to change the legislation and to issue directions to ensure that the authority to make the improvements is clear.

We describe our recommendations in the paragraphs that follow. One area of particular concern to us has been the problems experienced in planning and delivering health capital projects. Indicative of the situation, Table I.1(b) shows that health projects have not delivered against the funds allocated. In Appendix F, we describe how our recommendations, which apply to all the projects, should begin to improve the capital management practices specifically for health projects.

B. CAPITAL MANAGEMENT GOVERNANCE

We recommend the creation of one governance model with two clearly distinct areas; Pre-Implementation and Implementation. Pre-Implementation involves planning and all activities leading up to project approval. Implementation includes all activities after project approval, including post-implementation reviews. We envision a clean hand-off from one area to the other.

The governance model is applicable to both ministries and non-commercial Crown corporations (which is the scope of this study).

As indicated in our description of the current situation, the role of the Crown Corporations Secretariat is somewhat unclear with respect to monitoring and, if appropriate, intervening in capital projects in the Crown corporations for which it has responsibility. However, the CCS' role in advising, assisting and supporting such Crown corporations in the planning of capital projects is clear. Our recommendation is that the latter role of advisor remain, particularly as it links to the role of the Cabinet Committee on Crown Corporations. Nevertheless, we are recommending that the Minister of Finance and Corporate Relations retain within the Minister's purview the authority or right to monitor or take action on the management of capital projects in these Crown corporations. It is always within the discretion of the Minister to delegate such authority to the Crown Corporations Secretariat if appropriate or desirable.

In Section III, we noted confusion and frustration in the roles and responsibilities between the Capital Division staff, and staff in the ministries, local agencies, etc. We believe these problems will be substantially eliminated with the implementation of our recommendations on business cases, standard practices, better reporting, etc. The risk of overlap, gaps or errors should be significantly reduced.

Capital Division has a unit called the Implementation Branch. The intervention activities of this Branch should be reduced over time as the new standards are applied. This will lead likely to a redeployment of the resources in the Branch and a change in the focus of their efforts to an oversight role. The timing will depend on the speed of implementation of the recommendations.

Specific Recommendations

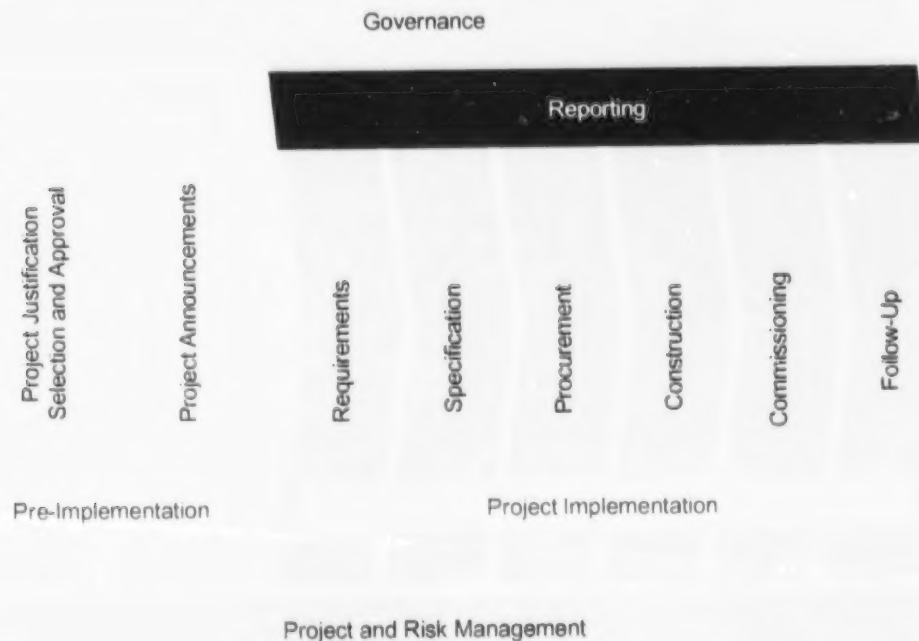
- Capital Division's involvement in project implementation should be refocused to an oversight role.
- The FAA and the FIA should be amended to extend the authority of the MFCR over capital projects that currently exist for ministries to include designated Crown corporations. This will include the following:
 - *The Minister of Finance and Corporate Relations may develop and issue policies, guidelines and directions in respect to the planning and implementation of capital projects in Ministries of the government (as defined in the FAA) and non-commercial Crown corporations.*
 - *Without restricting or limiting the circumstances, the Minister of Finance and Corporate Relations may place special conditions on any monies lent to Crown corporations, or any guarantees or indemnity, or any contribution, or other financial undertaking in respect to a capital project.*
 - *The Minister of Finance and Corporate Relations, under the Financial Information Act must be provided with information on request. It is recommended that the definition of "information" be both broadened and made more specific with respect to all information pertaining to capital projects.*

V. RECOMMENDATIONS

RECOMMENDATION FRAMEWORK

Through an examination and analysis of the current situation as outlined in Sections II and III, a future framework was recommended in Section IV. Section V presents the recommendations that will enable the Government to move towards this future framework. Figure V.1 depicts this framework and its components.

Figure V.1 – Recommendation Framework



Most of the difficulties that we observed were in the pre-implementation stage and the early parts of project implementation.

In the future framework, we are proposing major improvements in the activities involving pre-implementation and requirements definition: activities that take place early in the project life cycle. In some areas, our recommendations build on current activities or previous attempts to make improvements. One of the significant differences in our approach, however, is the recommendation to change the legislation and to issue directions to ensure that the authority to make the improvements is clear.

We describe our recommendations in the paragraphs that follow. One area of particular concern to us has been the problems experienced in planning and delivering health capital projects. Indicative of the situation, Table 11(b) shows that health projects have not delivered against the funds allocated. In Appendix F, we describe how our recommendations, which apply to all the projects, should begin to improve the capital management practices specifically for health projects.

B. CAPITAL MANAGEMENT GOVERNANCE

We recommend the creation of one governance model with two clearly distinct areas: Pre-Implementation and Implementation. Pre-Implementation involves planning and all activities leading up to project approval. Implementation includes all activities after project approval, including post-implementation reviews. We envision a clean hand-off from one area to the other.

The governance model is applicable to both ministries and non-commercial Crown corporations (which is the scope of this study).

As indicated in our description of the current situation, the role of the Crown Corporations Secretariat is somewhat unclear with respect to monitoring and, if appropriate, intervening in capital projects in the Crown corporations for which it has responsibility. However, the CCS' role in advising, assisting and supporting such Crown corporations in the planning of capital projects is clear. Our recommendation is that the latter role of advisor remain, particularly as it links to the role of the Cabinet Committee on Crown Corporations. Nevertheless, we are recommending that the Minister of Finance and Corporate Relations retain within the Minister's purview the authority or right to monitor or take action on the management of capital projects in these Crown corporations. It is always within the discretion of the Minister to delegate such authority to the Crown Corporations Secretariat if appropriate or desirable.

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 - *Without restricting or limiting the circumstances, the Minister of Finance and Corporate Relations may place special conditions on any monies lent to Crown corporations, or any guarantees or indemnity, or any contribution, or other financial undertaking in respect to a capital project.*
 - *The Minister of Finance and Corporate Relations, under the Financial Information Act must be provided with information on request. It is recommended that the definition of "information" be both broadened and made more specific with respect to all information pertaining to capital projects.*

- *The Financial Information Act expressly provides authority for the Minister Responsible for the Crown corporation to investigate the financial affairs of the Corporation. Consideration should be given to allow the Minister of Finance and Corporate Relations the same authority for capital project financial affairs.*
- *In respect to the relationship between the Minister of Finance and Corporate Relations and other ministers (and their Ministries) of the Executive Council, we foresee no need to change the legislation because the FAA (section 6.3) already provides the following:*
 - *"each Minister is responsible for the administration of the financial affairs of his or her Ministry, under the general discretion of the Minister of Finance and Corporate Relations and the Treasury Board".*

C. CAPITAL MANAGEMENT PRE-IMPLEMENTATION PROCESS

1. Project Justification, Selection and Approval

1.1 Project Classification

When a project business case comes to Treasury Board for approval, we recommend the following practices.

Treasury Board should establish classifications of projects based on a project's cost and risk profile. Associated with each classification are project management standards, reporting requirements and funding milestones, which must be respected by implementing organization (e.g., local agency) and management. Appendix B presents an illustrative classification framework. A formal framework including criteria and weighting must be developed by Treasury Board staff.

This classification would have a number of implications including: the degree of screening that will be applied throughout the life of the project; the required complexity of the business case outlined previously; the degree and scope of reporting on the project, etc. Moreover, most of the recommendations in the report would be applied to a project in proportion to its classification.

1.2 Business Cases

We are recommending a business case method for each project in which no project would be approved without a business case justification. Each business case would include a financial analysis as well as a discussion of the social and economic impacts of the project.

As the business case method will require significantly more up-front work, including a more refined cost estimate, we are recommending the process described in the following paragraphs:

Based on the project idea, a "project study" paper will be produced. This will be a brief (two page) document outlining the proposed project and preliminary considerations on why this project should be pursued, in combination with a high-level estimate of the financial business case.

We recommend monies be provided to the Capital Division to then be allocated to agencies, Crown corporations and ministries for pre-planning purposes. To obtain "seed" monies, local agencies/authorities will have to submit their project study outlining the purpose of the project. Based on the two-page project study paper, a decision will be made on whether funds will be provided to develop a complete business case for the project. This decision will be based on factors such as strategic fit with the ministry's

direction, likely availability of funding, regional initiatives, etc. This recommendation could be a temporary mitigation measure until the business case methodology is well-established as a common practice.

Projects included in a ministry's LTCP should be supported by a standard business case. Included in the business case should be an assessment of the ongoing operational impacts of the project. With a more detailed business case analysis, projects can be evaluated fairly and consistently, not only within the ministry but among ministries by the Treasury Board Ministers. With every business case there should be a cover sheet summarizing the financial, social and economic factors of the project.

Prioritization of projects should be done with clear frameworks established by each ministry. Within a ministry, it is expected that the criteria for project selection would be based on the established policy and strategy priorities, and would be consistent with the Government's priorities at that point in time.

Treasury Board staff would review business cases for soundness and would challenge submissions as required.

1.3 Approval Process

A phased approval process should be implemented. This process will require a return for approval at each phase of the project to obtain funding for the subsequent phase. This will, in the absence of any reporting, allow the Treasury Board to understand the timing of project expenditures.

Specific Recommendations

- On behalf of Treasury Board, the Capital Division should refine and implement a standard business case methodology for evaluating capital projects.
- Unit rates and standards should be used in project requirements and specifications planning.
- All project proposals should identify the financial implications and linkage between capital and operating budgets.
- Systems should be developed to track the expected life and condition of fixed assets.
- A project classification system should be introduced based on project cost and risks.
- A phased approval process should be implemented for all capital projects based on project classification.

2. Project Announcements

Ministers and ministries should be provided with a standard set of guidelines for announcing capital projects. In general, these guidelines should suggest that projects should not be announced until after the business case has been approved by Cabinet. Under the proposed system, Ministers will have several opportunities to announce a capital project, e.g. (1) after the project is approved in principle, (2) at the beginning and at major milestones of the construction stage, and (3) at the construction completion stage.

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Specific Recommendation

- Standard guidelines should be implemented for announcing capital projects.

D. CAPITAL MANAGEMENT REPORTING PROCESS

The objective of the reporting and monitoring framework is to ensure that accurate and complete information is communicated to the appropriate stakeholders in a timely manner. This allows the stakeholder to assess the status of a project and to identify potential problem areas before they occur so that corrective action may be taken. A reporting standard for all projects should be in place with regards to financial reporting, potential risk areas, project status and milestone tracking. A reporting policy is only one part of an effective overall capital project management framework.

Some local agencies feel that current reporting requirements are too burdensome. The introduction of a project classification system will permit flexibility in reporting requirements depending on risk.

A new reporting requirement guideline and framework does not necessarily imply the purging of existing reporting requirements. Rather, the requirement is the consolidation and refinement of current reporting practices into a comprehensive reporting structure that both clarifies the minimum requirements and ensures essential reporting elements are not overlooked.

The information surrounding capital projects should be available within each agency. Therefore, a mechanism to appropriately capture this information in a manner that would remedy the above noted reporting concerns is required.

Following this, each agency should electronically submit their data to a database maintained by the central agency (Capital Division). This information will be used to generate the reporting needs of all the interested parties.

This system would in effect replace the current submission of forms process of reporting and thus eliminate the burden on the agencies while providing the required level of information centrally.

The main attributes of an effective reporting policy are:

- A standard format for reporting should be established with minimum standards in place. Minimum standards would enhance clarity and continuity while providing sufficient flexibility to cater reporting requirements to a particular project or agency. Thus, those requesting the reports (the Treasury Board and the Ministry of Finance and Corporate Relations) as well as those producing the reports will have defined expectations. Accordingly, sufficient detail will be provided to the government bodies to ensure that they understand what is required. If a particular agency or project requires report formats that differ from those requested, they should be drafted by that agency and approved.
- Educational training sessions should be provided to the agencies in order that they become comfortable with the reporting requirements as well as gain the skill level required to meet these requirements. This is especially the case with regard to the Earned Value Management approach.

- A minimum variance deviation by clarification should be established in order to identify variances that are considered to be significant.
- Controls should be implemented at the project level to assure accuracy is maintained.
- A requirement for the development of a reporting plan should be established in order to ensure that stakeholder needs for each project are met.
- Reporting policies will have to take into account potential changes in the Government's approach to accrual accounting and single entity reporting; this should be consistent with the Budget Process Review Panel's recommendations.

Best practices are detailed in Appendix C and should be used as a guide in developing new reporting requirements.

Specific Recommendations

- Standard information reporting practices should be implemented.
- Project reporting requirements based on project classification should be established.
- A central database should be established in order to capture capital project information that would be used to prepare reports to meet the needs of all stakeholders, while reducing both preparation and duplication of effort.

E. CAPITAL MANAGEMENT IMPLEMENTATION PROCESS

An integral component in achieving a successful implementation of a project is a standard, comprehensive capital project framework.

The draft Process and Policies Manual proposed by Capital Division appears to be fairly comprehensive. However, some processes and policies have been omitted from the framework, as well as certain other elements that merit consideration. The crucial omissions are listed below:

- Conceptual phase
- Risk management
- Independent reviews and audits
- Project management structure
- Staffing and expertise
- Procurement
- Commissioning
- Follow-up

Particularly, independent reviews and audits reduce the risk of imprudent management and act as a check to ensure that management is meeting its performance expectations.

Furthermore, due to factors such as technological advances and increasing demands, capital projects have increased in their complexity. Project complexity results in greater demands being placed on project management, which in turn increases the risk of cost overruns, schedule delays and performance deficiencies. As a result, experienced skilled professionals should be considered to provide independent

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and objective checks and evaluations of the implementation processes during the life cycle, to help ensure that the project cost, schedule and quality objectives are met.

Among the rights reserved by Treasury Board or its delegate should be the right to reject the project manager selected by the implementing agency.

Many local agencies do not have the expertise to implement a large and often costly capital project. These agencies will need to draw project management talent from elsewhere. A follow-up review should be conducted in order to ensure that lessons learned from a project are passed on to subsequent projects. Evaluations for staff members should reflect their ability to execute their phases of the project.

The payment process for health care projects needs to be streamlined and should be similar to that already in place in other ministries. For example, in some other ministries, the process is that once the managing consultant approves the invoice for payment, it is paid; then, on a regular basis (i.e., monthly or periodically) representatives from the Capital Division and the agency review all expenditures. One option for health projects is that the Project Building Committee with representation from the various interested parties could review the expenditures. Other audits could also be conducted.

It is evident, by the draft Manual outline developed by the Capital Division, that the Government has already recognized the immediacy of the need to implement a sound, comprehensive capital management framework. However, because the Manual is in the early stages of development, it is merely a listing of key areas and phases, presented in the form of a table of contents. As a result, we have deepened the understanding of the framework, modifying, explaining and detailing each phase (Appendix D).

The suggested framework (Appendix E) includes up to five levels of policies and processes not mentioned in the Government framework. This framework is intended to render guidance in the development of a more sound Consolidated Capital Plan Process and Policies Manual.⁹

Specific Recommendations

- A standard implementation approach should be employed for all capital projects; the specific approach used will be based on the project classification.
- Treasury Board should reserve the right to retain approval of key project elements (e.g., on-site project manager).
- Independent reviews and audits should be conducted on capital projects when considered necessary by the central agency.
- Performance reviews of accountable staff should be linked to capital project performance.
- The payment process for health care capital projects should be streamlined.
- Follow-up reviews should be conducted on all capital projects.

⁹ The scope of our study was on the social capital ministries and the so-called non-commercial Crown corporations; the Government may wish to consider extending some of these recommendations to all capital projects financed or supported by the Government.

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VI. RECOMMENDATIONS ROADMAP

The purpose of this section of the report is to provide an integrated program plan for the redesign and/or development of the proposed project management framework. As such, it is the overview strategy for implementation of the recommendations set out in Section V. The detailed plan is not within the scope of our study but should be the first step once the recommendations are accepted.

The "Roadmap" can be used to communicate the direction that the Government intends to pursue. It also sets the timetable against which programs can be monitored by Ministers, Treasury Board, and senior officers. With the exception of the current initiative of Capital Division, few of the studies conducted regarding capital management have provided steps and accountability to follow to realize the benefits of their recommendations. It is possible that other initiatives or studies that may be underway or planned which relate to capital management could be added to the Roadmap. One of the benefits of a comprehensive program is that it shows the timelines, dependencies and resource requirements; the latter is particularly important in planning priorities, available time, need for external assistance, etc.

Exhibit VI.1 is a schematic that shows the various initiatives, and the approximate timetable.

There are four major program work streams. These are:

- **Legislation and directives** – which has activities to provide the authorities to manage projects, and to clarify the roles and responsibilities of Government officials.
- **Policies and practices** – which has activities to establish the single, integrated management process.
- **Tools, techniques and methodologies** – which has the activities to develop and implement all the support instruments to enable the process.
- **Training and communication** – which are the activities to educate the parties on the new policies, practices and procedures so that there is a clear understanding of the new techniques.

Each of the major tasks are shown in the exhibit. The following have been considered in the timing of the tasks:

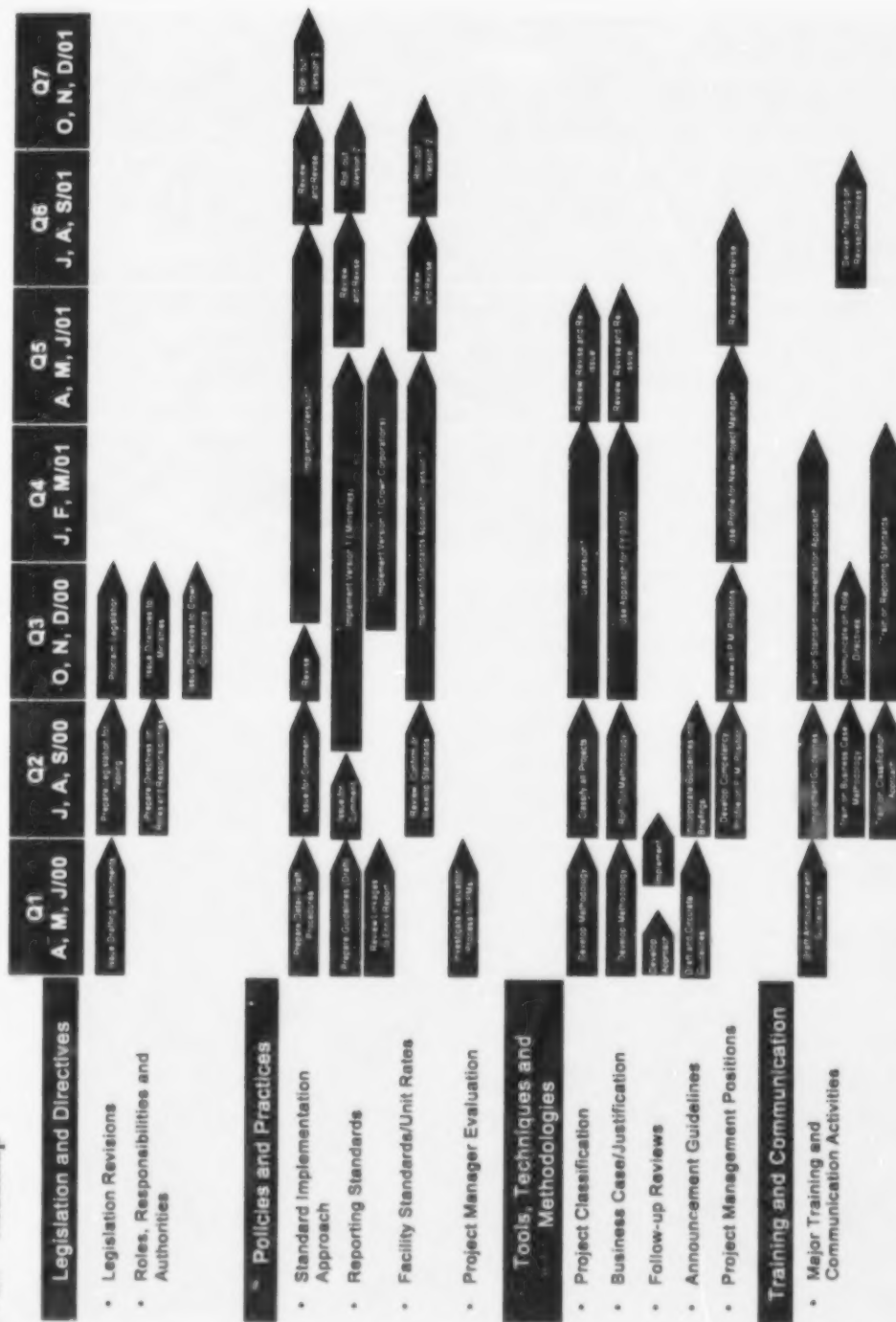
- The fiscal year of the Government;
- The budget preparation process;
- The typical work cycle for project proposals, and
- The schedule for the Legislature.

The implementation strategy has the following additional features:

- It assumes that each new practice will have two roll-outs; one an initial roll-out to test and refine the practice and then, a final roll-out.
- It provides time for consultation among the Treasury Board staff, staff in the various local agencies, ministries, and Crown corporations' officials to develop and review the proposals.
- It provides for a stream of activities for training, education and communications to ensure all the appropriate parties understand the new policies and practices.

Thus, in an eighteen-month timeframe, significant progress can be made to dramatically improve the capital management process.

Exhibit VI.1 – Roadmap



**CAPITAL MANAGEMENT
PROCESS REVIEW
FOR
THE GOVERNMENT
OF BRITISH COLUMBIA**

Appendices

April 2000

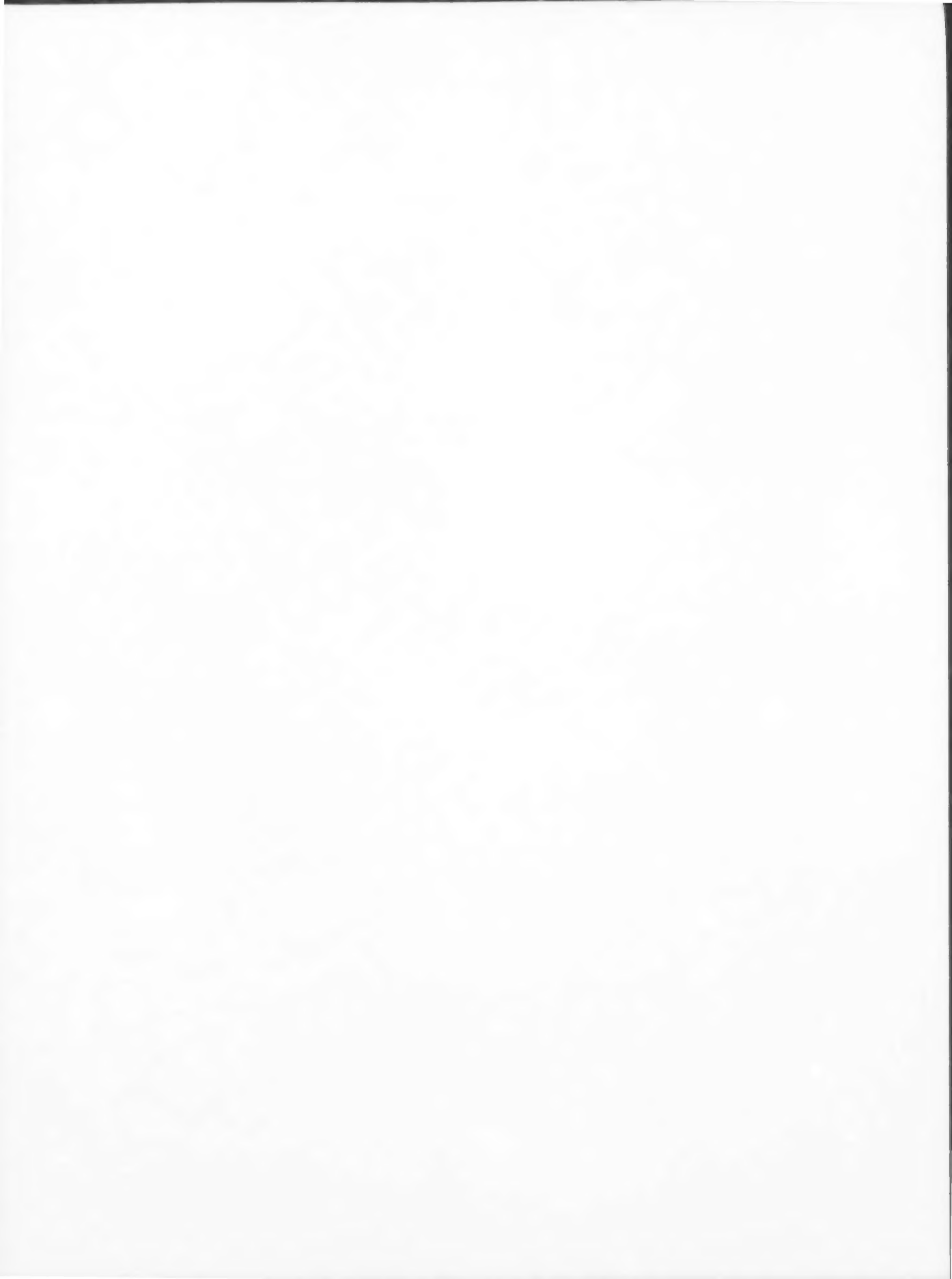
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Appendix A:

Lines of Inquiry

APPENDIX A: LINES OF INQUIRY

The lines of inquiry illustrate the key phases of capital project contracting upon which we focussed our review of the selected capital projects. The relevant lines of inquiry are set out for each phase of the capital project's life cycle. The scope of our review included all phases up to the delivery/commissioning phase of each capital project.

The following lists all the major elements within each line of inquiry and the types of questions that were considered in our review.

General Information

Elements

- Determination of project ownership
- Management structure of the project
- Source of funding of the project
- Involvement of central agencies in the project

Sample Questions

- Is ownership clearly defined and has appropriate legal documentation been prepared?
- Has management continuity been provided throughout the project?
- Is there an appropriate management structure in place?
- Is there an acquisition strategy in place?
- Have financing alternatives been considered and evaluated?
- At what phase in the project are the central agencies involved and how often are they up-dated?

Project and Risk Management

Elements

- Procedures for briefing the Minister
- Liaison with related Crown corporation's board of directors
- Regularity of reporting
- Establishment of schedules, budgets, financial and other controls
- Consideration of specifications, regulations and legislation
- Tracking of milestones and project objectives

Sample Questions

- Have the project managers ensured that the information provided to stakeholders is complete, accurate and realistic, and timely?
- Did Treasury Board staff review and approve contracts as required?
- Were milestones, significant events and deviations reported to the relevant authorities?
- Does the contractor provide progress reports on the financial and physical status of the project?
- Were the relevant ministers notified of unsatisfactory performance?
- Are the individuals managing the project information qualified and competent?
- Are controls in place for each phase?

- Have the required resources been defined, committed and acquired at the lowest cost possible commensurate with achieving the project objectives of each phase?
- Has each project phase been defined and managed according to its particular objectives, terms of reference, etc.?
- Has timely completion of each phase and the overall project been given high priority?

Responsibility and Accountability

Elements

- Establishment of levels of authority
- Definition of roles and responsibilities for each phase of the project
- Communication of roles and responsibilities

Sample Questions

- Has overall responsibility been assigned to one project leader?
- At what phase in the project was the project leader assigned?
- Did the project leader have sufficient authority to exert effective leadership throughout the project?
- Who was responsible for initial planning, cost estimating, requesting funds, receiving approval for the project, implementation, etc.?
- Have key individuals involved in the project been determined for planning and implementation?
- What were the responsibilities of persons assigned to the project and were they appropriately communicated?
- Was there continuity throughout the project with regards to project organization?

Requirements Definition

Elements

- Determination of program objectives
- Definition of requirements with reflected program objectives
- Consideration of public policy issues
- Estimation of project costs
- Preparation of statement of requirements
- Approval in principle

Sample Questions

- Are the objectives for the project clear and documented?
- Have the project objectives been approved by the appropriate Minister?
- Is there an adequate statement of need?
- Is the need linked to the program objectives and the mandate and strategic plan of the Ministry?
- Is the defined need regularly reviewed?
- Is the need justifiable and is there documentation to support this?
- Does the need reflect general government objectives?
- Have known and potential costs been considered?
- Is there documentation of the analysis performed with supporting information?

- Have appropriate analytical methods and assumptions been used and consistently applied?
- Has the analysis been presented to the appropriate stakeholders?

Specifications Definition

Elements

- Performance of options analysis
- Determination of possible constraints
- Creation of risk profiles
- Development and evaluation of preliminary project concept design
- Revision of cost estimation
- Establishment of project management methodology
- Transition from a preliminary phase to a project that is clearly defined
- Further development of budgets, schedules, organization and financial and management controls

Sample Questions

- Have alternatives been considered which would fulfill similar needs?
- Have possible problems and potential solutions been explored?
- Have technology issues been considered?
- Have feasibility studies been conducted on the available options?
- Have appropriate analytical techniques been applied for qualitative and quantitative items, when possible?
- Has the options analysis been reviewed and approved?
- Have government objectives outside the ministry been considered?
- Has the financial impact of the life cycle effect on: financial, social, human, and physical resources been considered?
- Have risk levels been defined and established?
- Has the degree of risk associated with the project been assessed, both qualitatively and quantitatively?
- Have life cycle costs been used as a basis for the concept design and in evaluating concept design alternatives?
- Has a cost benefit analysis been conducted on the project options?
- Have the life cycle costs of the project been calculated for the various options?
- Has a construction agreement prepared and approved, following the review of all contract requirements with the contractor?
- Has the specification analysis been reviewed and has the option selected been approved by senior personnel?
- Have the assumptions used in the option selected been disclosed?
- Are appropriate financial controls in place with regards to payments?

Procurement Process

Elements

- Processes and alternatives for contracting project design and construction
- Assessment of cost versus quality
- Consideration of industrial benefits

Sample Questions

- Have the options of out-sourcing, in-house and PPP (Public Private Partnership) been evaluated and documented?
- Has the procurement strategy been approved and by whom?
- Has availability and pricing of required resources been analyzed and defined?
- Has a list of qualified and available contractors been established, reviewed and approved?
- Has a Request for Proposal been sent to all contractors identified?
- Is the procurement process competitive or non-competitive?
- Is the bidding process transparent and fair?
- What methods were used to evaluate tenders?
- Has employing a local contractor for regional economic benefit been considered?
- If the selection of a contractor was influenced by industrial benefits, has the rationale for their selection been documented?

Construction

Elements

- Development and renewal of detail design
- Consistency of design with project objectives, costs, and constraints
- Financial management, supervision and inspection
- Delegation of authority
- Establishment of authorization and protocol for changes required
- Contingency planning

Sample Questions

- Has a comprehensive project brief been prepared?
- Was an approved master and outline schedule prepared from the project brief identifying milestone dates throughout the project life?
- Were all drawings and specifications required for obtaining tenders for construction complete?
- Is there an appropriate plan and system of quality assurance/control in place?
- Have periodic project reports been prepared including: progress reports, deviations, completion dates, test results and recommendations, cash flows, projections, etc.?
- Has there been appropriate delegation of authority?
- Have appropriate approvals been obtained throughout this phase?
- Has appropriate contingency planning taken place?

Delivery/Commissioning

Elements

- Formal process to assess project completion
- Delivered capital asset is consistent and reflective of project objectives
- Establishment of protocol for unsatisfactory delivery
- Project closure via transition and delivery of capital asset

Sample Questions

- Is there a formal process in place to conduct quality reviews to ensure that the capital asset meets expectations and requirements?
- Are outstanding items documented?
- Does the process include reviewing the project to determine if milestones were adequately met within the pre-determined time frame and according to budget?
- Are debriefed documents retained and distributed to other project managers as recommendations to be considered for similar projects?
- Is there a clear definition or explanation as to what would be considered "unsatisfactory" delivery?
- Has a protocol been established to follow if an asset delivered is determined to be unsatisfactory?
- Has a preventative maintenance program been developed in conjunction with contractors and users?

Appendix B:

Illustrative Project Classification Framework

APPENDIX B: ILLUSTRATIVE PROJECT CLASSIFICATION FRAMEWORK

This represents a potential project classification framework. Note that this is not a definitive framework for assessing risks, it is merely an example to illustrate how projects could be placed into one of three classifications.

The risk framework could be based on:

Probability

- 0 = no chance of factor becoming a problem
- 1 = low probability of factor becoming a problem
- 2 = medium probability of factor becoming a problem
- 3 = high probability of factor becoming a problem

Weighting (i.e., impact on project)

- 0 = factor has no impact on project
- 1 = factor has low impact on project
- 2 = factor has medium impact on project
- 3 = factor has significant impact on project

Notes – This does not allow for much variation for weighting factors – this could be expanded in general or on a project-by-project basis.

- Three levels of project classification could be used i.e., low, medium and high risk.
- The probability and weighting factors could be adjusted as the project proceeds.
- Not all factors will be applicable at the outset of the project. For example, the project manager/team/contractor experience will generally apply only as the capital project proceeds.

Area	Factor	Probability 0 - 3	Weighting 0 - 3	Result (Probability Impact)
General Risk	High Visibility			
	Public Concerns/Objections			
	Environmental Factors			
	Safety Issues			
	Legislative Changes			
Management Risk	Complexity			
	Unclear or Changing Scope			
	New Technology			
	Project 'Newness' (Has this ever been done before?)			

Area	Factor	Probability 0 - 3	Weighting 0 - 3	Result (Probability Impact)
	Experience Level of Project Manager (Has he/she done something like this before?)			
	Experience Level of Project Team/Contractor (Have they done something like this before?)			
	Aggressive/Changing Time Schedule			
	Labour Productivity Drop			
Construction Risk	Availability of Skilled Trades			
	Labour Disruptions			
	Material/Equipment Availability			
	Weather-related Problems			
Economic Risk	Project Funding Uncertainty			
	Labour Cost Increases			
	Material/Equipment Cost Increases			
	Currency Fluctuation			
	Project Total			

Based on the total risk assessment, projects could be classified in three levels as follows:

Score	Risk Classification
<P	Low Risk
P-Q	Medium Risk
Q+	High Risk

The project classification (Class A, B or C) could be based on cost and risk as follows:

Project Risk			
Project Cost	Low Risk	Medium Risk	High Risk
0 - X Million	Class C	Class C	Class B
X - Y Million	Class C	Class B	Class A
> Y Million	Class B	Class A	Class A

Appendix C:

Best Practices for Reporting Information on Capital Projects

- A. General Principles**
- B. Reporting Needs**
- C. Reporting Plan**
- D. Report Types**
- E. Bank/Lender Expectations**

APPENDIX C: BEST PRACTICES FOR REPORTING INFORMATION ON CAPITAL PROJECTS

A. GENERAL PRINCIPLES

1. *Simplicity and Clarity*

- The language and presentation of documentation and information should be kept as simple as possible to avoid confusion and misinterpretation.
- Documentation to senior officials as it relates to the project should be clear and unbiased.

2. *Accuracy and Completeness*

- A requirement should be in place stipulating that all project managers are to provide timely and accurate cost reporting.
- Appropriate financial controls should be in place to better ensure accuracy of information output.
- Appropriate project control procedures documenting formally approved scope, schedule and budget parameters should be in place.
- The project manager should be aware and in control of the following engineering information to ensure that reports are complete and comprehensive, allowing proper evaluation of a project's progress:
 - Labour hours
 - Drawing production
 - Specifications and contract writing production
 - Vendor drawings and data
 - All problem areas through weekly meetings or punch lists
 - Reporting should be comprehensive of performance, scope, time and cost

3. *Timeliness*

- A project control cycle should be developed and followed to help ensure variances are tracked and monitored as they occur or in the most timely manner possible.
- The amount of time to complete the control cycle should be kept as short as possible, in order to:
 - Attend to problems efficiently; and
 - Monitor and control related and non-related problems that could be developing in the interim.

- Information gathered and integrated into the reports should be current to ensure analysis is conducted on the most relevant information.
- All reports should be received on a timely basis.

4. Frequency

- Reports that monitor project progress including scope, cost and schedule, against plans should be produced on a regular basis.
- Based on a review of various program management practices and standards, at least monthly reports are generally required with weekly in many instances.
- To fulfill the monthly/weekly reporting requirement, data must be maintained on a weekly/daily basis at the project level for it to be ready for review by the project manager at any time.
- Trend forecasts on a weekly basis from the project manager are recommended.

5. Transparency and Revision

- Authorized personnel are to review and evaluate reports generated.
- Relevant, accurate and up-to-date information is to be presented to senior management and to Treasury Board.
- All problems or potential problems are to be brought forward, not disguised or obscured, regardless of possible political or other implications.

6. Continuity

- Anticipated risks, costs and effects should be analyzed and reported throughout the construction process.
- The schedule format should be designed in a manner that it can be used both for in-house and review purposes, including cost and performance tracking.
- A "bottom-up" reporting approach should be implemented, whereby the most detailed reporting occurs at the project level, on a daily basis, incorporating all pertinent information that is required at the top of the reporting hierarchy. As the information flows up the reporting hierarchy, it increasingly loses its detail in order to reflect the reporting needs of each level of reporting.

B. REPORTING NEEDS

1. Establishing an Appropriate Level of Reporting

- Before reporting needs are established, the general structure of a capital project should be broken down into components to enable better project management and control.
- The components should be organized hierarchically in order that external attention can be focussed on the most pertinent areas.
- Constraints, or other factors that limit reporting options should be considered. For example: if a majority of the resources are procured, more consideration should be given to reporting of contractual information.
- Communication requirements should be identified by combining the type and format of information required with an analysis of the value of the information.
- Furthermore, project resources should be expended only on communication of information which contributes to success or where lack of communication can lead to failure.
- The following interrelationships and issues need consideration in order to properly determine project communication requirements:
 - Stakeholder analysis
 - Project organization and stakeholder responsibility relationships
 - Disciplines, departments, and specialties involved in the project
 - Logistics of how many individuals will be involved with the project and at which locations
 - External information needs

2. Creating Minimum Reporting Requirements

- Although all projects differ, a minimum reporting standard should be established which is general and flexible to allow for specific project reporting needs, while providing concrete guidelines and requirements for all projects.
- As a minimum requirement, capital project reporting should incorporate the following concepts:
 - Cost - project cost in constant and current dollars.
 - Time - target dates, impact of potentially and actually missing target dates on the project and on departmental operations, all target dates missed and revised.
 - Performance - expected and essential characteristics and quantity of product resulting from the project.

- In all cases, a permissible variance variation level should be established for each project, and, if necessary, for each factor being measured. This will enable management to review and analyze pertinent variances only and will allow for the timely recognition of what constitutes a material variance.
- More specifically, to be effective, progress reports and reporting requirements should incorporate the follow minimum standards:
 - Comparison of actual costs to budgets, with explanations for variances above the established threshold
 - Corrective action to be taken on the variances identified
 - Progress of design against schedule, reason for delays and remedial action taken
 - Details of scope changes and related costs
 - A narrative including:
 - ♦ Accomplishments for the period
 - ♦ A simple statement indicating project is on, ahead or behind schedule
 - ♦ A listing of any changes to project objectives or scope
 - ♦ A listing of any factors or changes that have affected the business climate
 - ♦ Any unanticipated problems that are currently being faced
 - ♦ Any changes required due such problems
 - ♦ A listing of persons whose approval is required to implement these changes
 - ♦ Any additional anticipated problems
 - ♦ All action steps that are being taken or planned
 - ♦ All potential constraints should be identified, analyzed and reported
 - ♦ Additional relevant comments

C. REPORTING PLAN

- A reporting management plan should be created. The characteristics of this plan depend on the needs of Treasury Board as the ultimate authority of the project, and on the organizational structure of the project.
- As government capital projects all have similar organizational structure (or can be broken down into two main groups: Crown corporations and social capital), a communication management plan framework can be established for all projects, which should be modified or enhanced to reflect specific project reporting requirements.
- A reporting management plan can be informal, formal, highly detailed or high level based on project needs. However, regardless of its structure, the reporting management plan should provide:
 - Detail on the method to be used to gather and store various types of information, including procedures for updating and correcting previously distributed material.

- Factors to consider when establishing the communications technology required and the methods of transfer of information, including the dependency of the project's success on the immediacy of the need for information; the need and frequency of updated information; the availability of technology; expected project staffing; the length of the project, etc.
- A distribution structure detailing to whom information will flow, and what methods will be used to distribute various types of information. This should be conducted with reference to the project organization chart and should include the following elements.
 - ♦ Identification of departments involved, e.g., Engineering; Procurement; Estimating; Accounting; Planning and Scheduling; Construction; Payroll.
 - ♦ Identification of the persons responsible for reporting and report drafting and their reporting requirements.
 - ♦ Time and resources should be given to the departments or persons responsible for reporting in order to enable them to fulfil their functions.
 - ♦ A description of the information to be distributed, including format, content, level of detail, and conventions/definitions to be used.
 - ♦ Production schedules showing when each type of communication will be produced.
 - ♦ Methods for assessing information between scheduled communications.
 - ♦ A method for updating and refining the communications management plan as the project progresses and develops.

D. REPORT TYPES

1. Status Reports

Status reports should be frequent, short, concise and contain pertinent information only. The following are specific contents, which should be considered when designing status reports:

- Cost
 - Cost commitment reports
 - S curve envelopes showing cost, commitments, trends and forecasts backed by tables showing budgets and forecasts
 - Costs incurred to date and what was acquired with those expenditures
 - Costs projected to completion and estimated date of completion
- Schedule
 - Chart, narrative description and milestone schedule
 - Schedule for goods acquired
- Variance Analysis
 - To date and projected performance; cost and schedule variances to date should be measured using an "earned value" approach

- Reporting procedures for variance analysis should be as brief as possible so feedback can be generated and responses can be developed in a timely manner
- Any rescheduling required due to the variance analysis should be accomplished in a short time frame
- Protocol for project and functional management when variances are identified are to be established, such as:
 - Diagnosis of problem
 - Corrective action
 - Developing a plan to recover the position
- Such protocol should result in the following responses:
 - Determination that variance does not require corrective action
 - Functional modification
 - Recovery plans
 - System redesign
 - Notification of unsatisfactory performance to persons responsible for procurement and financing to the supplier
- A specified area to address decisions made
- Detailed action to be taken on outstanding times and related physical progress to financial status
- A section which indicates that appropriate follow-up action has been taken and the contractor properly notified
- Exception reports
- Trends
 - Costs
 - Schedules of engineering, procurement and construction (referring to cost commitment and productivity or tracking curves for small projects)
 - Major trends should be highlighted and a discussion of their frequency and tendency to become change orders
 - Ongoing analysis of factors associated with the project, the degree of certainty of completing the project on time and within the current specifications and budget established
 - Extent of delays and projected revised completion dates
- Engineering Progress
 - Drawings
 - Specifications
 - Contracts
 - Design
 - Manpower

- Procurement (in general, covered in the engineering progress section)
 - List of purchase orders and contracts and the amount committed to them
 - A narrative highlighting monthly activity
- Construction Report, including a tabled calculation of productivity based on:
 - Man-hours
 - Materials
 - Contract expenditures
- Performance
 - Quality of work
 - Test results and recommendations
- Site Photographs

A sample table of contents for a monthly project status report follows.

SAMPLE TABLE OF CONTENTS FOR A MONTHLY PROJECT STATUS REPORT

- i) **INTRODUCTION**
- ii) **BUDGET ORIGATION AND MANAGEMENT PHILOSOPHY**
- iii) **DEFINITIONS**

- 1.0 **PROJECT BUDGET AND PERFORMANCE (SUMMARY)**
 - 1.1 Project Performance by Cost Area
 - 1.2 Project Performance by Major Cost Component
 - 1.3 Project Performance by Sub-Components
 - 1.4 Other Scope Performance

- 2.0 **PROJECT BUDGET AND PERFORMANCE (DETAILS)**
 - 2.1 Construction / Equipment Costs
 - 2.2 Project Specific Supplementary Costs
 - 2.3 Engineering Costs
 - 2.4 Administration Costs
 - 2.5 Property Costs
 - 2.6 Other Scope Costs
 - 2.7 Engineering and Construction – Summary of Costs by Contract

- 3.0 **SCHEDULE AND CASH FLOWS**
 - 3.1 Project Summary Schedule
 - 3.2 Current Project Status – Design and Construction
 - 3.3 Long Range Cash Flow

- 4.0 **BOARD APPROVALS**
 - 4.1 Chronological Board Approvals
 - 4.2 Board Approvals by Project Component
 - 4.3 Record of Obsolete Account Numbers

- 5.0 **COST SHARING**
 - 5.1 Provincial Revenue Sharing Grants
 - 5.2 Federal / Provincial Infrastructure Program Grants
 - 5.3 Grant Funding Status

- 6.0 **COST CODING**
 - 6.1 Project Component 1 Coding
 - 6.2 Project Component 2 Coding
 - 6.3 Project Component 3 Coding

- 7.0 **BUDGET RECONCILIATION**
 - 7.1 'Pre-design Report' Reconciliation to Original Baseline

2. Contractor and Designer Briefs

Contractor briefs should be prepared containing all information necessary for contractors to conform to project briefs, considering:

- Performance and quality specifications, design criteria/special requirements and schedule requirements
- Site restrictions and options
- Options for bidding on alternatives
- Scope of work/exclusions
- Mandatory design standards

A comprehensive brief should be prepared for designers including all information necessary to conform to project approval documents, considering:

- Procurement requirements
- Design development procedures
- Scope of design work
- Design project budget
- Project schedule requirements

A project brief should be prepared including:

- Statement of objectives
- Work breakdown structure
- Project agreement
- Project schedule
- Project budget

3. Budgets

From the project brief, approved budgets and individual budgets should be developed for:

- Design fees
- Project team costs
- Contractor tender packages
- Material supplies
- Operating costs

Capital cost estimates should be prepared, considering:

- Capital cost content of each work package
- Procurement cost
- Project organization costs
- Initial training costs
- Levels of risk

Operating cost estimates should be prepared for each work package, considering:

- Continuing training costs
- Basic operating costs
- Cyclical and non-recurring costs
- Lease payments/rentals

4. Schedules

Project schedules should include:

- All major events and dates must be clearly identified, and if statement of work is supplied by the "customer", these dates should be included
- If for any reason the customer's milestones cannot be met, the customer should be notified immediately
- The exact sequence of work should be defined through a network in which interrelationships between events can be identified
- Schedules should be directly related to the work breakdown structure. The minimum requirement should be to show where and when all tasks start and finish
- All schedules must identify the time constraints and if possible should identify the resources required for each event
- The complexity of the schedules should be tailored to each individual project's needs. Normally, multiple schedules are developed (at least two):
 - Summary schedules for management and planners and detailed schedules for the doers and lower level control
 - More detailed schedules may be strictly for interdepartmental activities
- Program management must approve all schedules down through to the first three levels of the work break down structure
- When draft reports are to be prepared all detailed schedules are to be consolidated and each functional program team member together with those in charge of reporting are to integrate all plans and schedules to verify that contractual dates can be met. This helps assure completeness and accuracy
- Reviews with customer should be undertaken to ensure nothing has fallen through the cracks. This minimizes production costs by reducing the number of early revisions

A complete project schedule should be prepared establishing:

- A schedule for each component
- Work packages in priority
- Milestone dates which should include: project start and end- date and other major milestones such as review meetings, prototype, procurement, testing, and reporting deadlines
- Dates of critical requirements
- Identification of degrees of risk associated with the time periods used in the critical path

Schedules can be developed using various methods such as:

- The critical path method: calculates a single, deterministic early and late start and finish date for each activity based on specified, sequential network logic and single duration estimated. Focus is on calculation float in order to determine which activities have the least scheduling flexibility
- The graphic evaluation and review technique: probability
- The program evaluation and review technique: sequential network logic and weighted average duration estimated to calculate project duration

E. BANK/LENDER EXPECTATIONS

Listed below are the documents/controls expected by a banker/lender for a major construction project.

Application Level Documents

- a. Quantity surveyor report - this report would be by a qualified quantity surveyor and would include all major components in a project and would include the cost to put them in place using industry standard costing for a geographical area.
- b. An as built appraisal - this would be a fair market value appraisal of the project on an as built basis. This would include a number of assumptions about the future revenue streams based on market data and lease up assumptions.
- c. A detailed project plan - the project plan would be a business case for the project. This plan would include a set of pro-forma financial statements, a detailed activity chart, a list of approvals required and their status. The pro-forma financial statements would include revenue projections and detailed cost accumulations by month during the construction period. The business case would include market data as to available space rental rates and provide a rationale for the project. An internal rate of return for the project would also be supplied based on the pro-forma financial statements.
- d. Architects' drawings - including detailed working drawings.
- e. If the project proponent is new to the lender, a corporate profile with prior project experience would be required with detailed resumes of the project managers.
- f. Title report on the land.
- g. Current financial statements for the entities involved in the project.
- h. A list of contracts tendered and the costs involved.
- i. A detailed cost budget for the project including all soft and hard costs. Soft costs include all consultants' reports, architects, engineers, interest during construction, permits and other levies. The hard costs would be broken down by major components of the project. These would include site preparation, on site and off site services, building shell costs, electrical, plumbing and HVAC costs.
- j. If the project is a revenue producing property or a property to be sold, pre-leasing and pre-sale data would be required.
- k. If personal covenants are being included then net worth statements of the principals.

- l. Phase I environmental report and if anything is found, a Phase II report.
- m. Land purchase contract.
- n. Credit reports on company and individuals.
- o. Often a map identifying the project, site photos and aerial photos would be provided.
- p. Certified resolutions and bylaws of the borrowers.
- q. Evidence of appropriate insurance coverage during construction with the lender as loss payee.

Construction Progress Documents

- a. Architects and quantity surveyor reports identifying the costs incurred to date and the percentage of completion by major project and budget category each month.
- b. A monthly report identifying costs incurred to date relative to budget with an explanation of variances. This report would show progress draws to date with the current draw requested. This report and project draw request would include certification by a senior official and the architects. Contractor billings would be attached.
- c. A report covering the progress to date and any variances from the initial completion dates would be provided. Often photographs of the site would be included indicating progress.

Completion Documents

- a. Final progress draw submitted.
- b. Occupancy permits.
- c. Municipal inspector reports.

Appendix D:

Best Practices for a Standard Approach to Capital Project Management

APPENDIX D: BEST PRACTICES FOR A STANDARD APPROACH TO CAPITAL PROJECT MANAGEMENT

Introduction

This Appendix elaborates upon the best practices identified in the Main Body of our Report. The reader may wish to examine or contact the references cited in the Report.

Project and Risk Management

Project and risk management encompasses project management methodologies, risk management planning, financial and management controls to manage and mitigate risk as well as aspects of reporting. Project and risk management mechanisms and processes should be determined at the inception of the project and carried out throughout the project phases.

Project Management Methodology	Management & Financial Controls	Reporting	Risk Management Planning
<ul style="list-style-type: none"> • Establishment of a Management Structure <ul style="list-style-type: none"> – Approach – Key Staff – Hierarchy Structure and Organization Chart • Project team skills & knowledge levels <ul style="list-style-type: none"> – Consultant considerations – Cost engineers – Project Managers – Other Experts 	<ul style="list-style-type: none"> • Financial Controls <ul style="list-style-type: none"> – Payments – Holdbacks • Management Controls <ul style="list-style-type: none"> – Documentation requirements – Timing requirements – Compliance with Legislation • Independent Reviews <ul style="list-style-type: none"> • Government Audits • Consultants Reviews and Recommendations • PMOs involvement and technical expertise 	<ul style="list-style-type: none"> • Reporting Plan • Structure of reporting <ul style="list-style-type: none"> – Procedures for briefing the Minister – Liaison with CCs' board of directors • Frequency of Reporting • Types of Reports <ul style="list-style-type: none"> – Milestone tracking – Objective and scope tracking – Status Reports – Budgets – Master Project Schedules – Schedules – Cash Flow 	<ul style="list-style-type: none"> • Risk Identification <ul style="list-style-type: none"> – Contingency Planning – Escalation – Post Contract – Quantification • Conflict Management • Risk Mitigation <ul style="list-style-type: none"> – Reserves – Insurance – Consideration of Legislation – Contracts • Corrective action <ul style="list-style-type: none"> – Risk containment – Scope revision – Reporting revision

Responsibility and Accountability

Similar to project and risk management, responsibility and accountability are also pertinent throughout the project's life cycle. It is crucial that roles and responsibilities be defined, clear, and communicated before the project commences in order to ensure proper leadership and accountability throughout the project. This not only includes communication within the upper echelons, but also the communication of corporate goals at the lower organizational levels.

Overlapping responsibilities should be kept to a minimum, unless they have been specifically designed as a control mechanism. Furthermore, clarity and definition of roles and responsibilities minimize misinterpretation and provide direction to successfully complete the necessary requirements.

This is especially important for government capital projects due to the interface between the central agencies, Crown corporations, ministries and local agencies.

Determination & Definition of Roles & Responsibilities	Communication of Roles & Responsibilities	Accountability
<ul style="list-style-type: none"> • Discussion and Documentation • Definition of Roles <ul style="list-style-type: none"> - Central Agencies - Ministries - Crown Corporations - Local Agencies • Project Manager • Contractor • Engineer • Designer 	<ul style="list-style-type: none"> • Meetings and information distribution <ul style="list-style-type: none"> - Central Agencies - Ministries - Crown Corporations - Local Agencies 	<ul style="list-style-type: none"> • Establishment of Project leader • Accountability <ul style="list-style-type: none"> - Initial planning - Cost estimating - Requesting funds - Receiving approval

Long-Term Capital Planning

Long-term capital planning allows the local and provincial agencies to focus on strategic goals and project variables. The long-term capital plans enable the Government to foresee capital requirements and project needs in advance. Long-term capital planning should incorporate operating, economic and socio-political elements of potential capital projects, as well as the funding availability of such projects. More importantly, long-term planning should include lessons learned from ongoing and previous projects through annual updating and revision of policies as conducted in the follow-up phase.

Identification of Strategic Project Variables	Eligibility for Funding	Project Requests
<ul style="list-style-type: none"> • Operating <ul style="list-style-type: none"> - Purpose and objectives - Technological change - Volume - Capacity • Economic <ul style="list-style-type: none"> - Market indicators (cycles) - Industry Forecasts • Socio-political <ul style="list-style-type: none"> - Consideration of Public Policy Issues 	<ul style="list-style-type: none"> • Alternatively Financed Projects • Cost Shared Projects • Capital Expenditure Reallocation 	<ul style="list-style-type: none"> • Approval Process • Business Case Requirements • Reporting and Audit

Project Concept

Prior to planning, designing and construction, there should be the recognition of a need for a new facility and the birth of an idea to fulfill this need. This phase encompasses three main elements: pre-feasibility analysis; needs definition; and feasibility studies. Feasibility studies are to be of an economic, technical, social and political nature. If any one of the feasibility studies fails or is inconclusive and cannot be remedied, no further resources should be expended on this project concept.

Proper implementation of this phase can reduce unnecessary spending, facilitate transition into the planning phase of the project and may reduce costs associated with the planning phase, if thoroughly conducted.

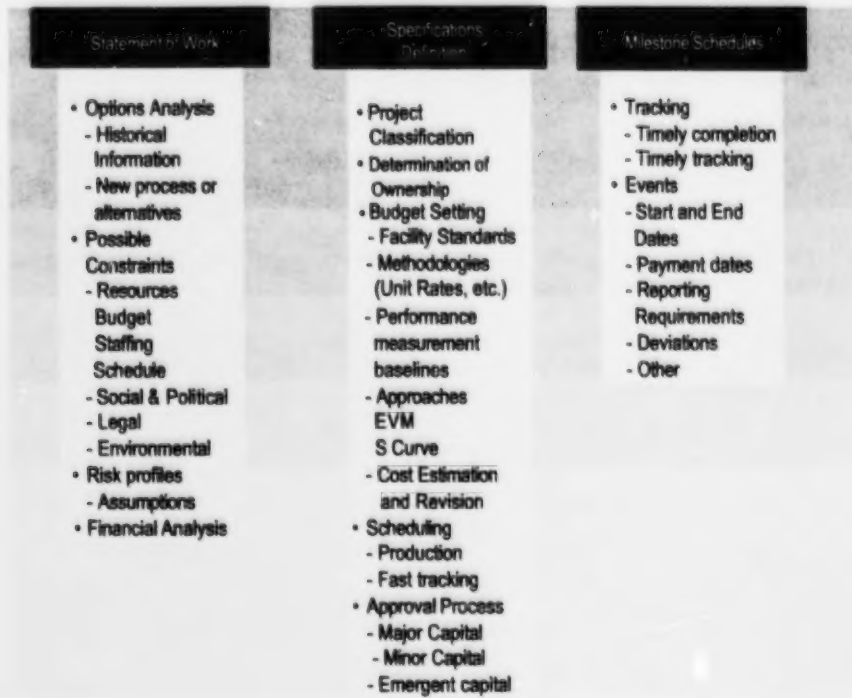
Pre-feasibility Analysis	Statement of Requirements	Feasibility Studies	Approval in Principle
<ul style="list-style-type: none"> • Major Projects • Executive level feasibility analysis 	<ul style="list-style-type: none"> • Program objectives • Requirements definition • Objectives incorporated into requirements 	<ul style="list-style-type: none"> • Economic <ul style="list-style-type: none"> - Estimation of Project Costs - Funding availability • Technical <ul style="list-style-type: none"> - Strategy design • Environmental & other Legislation • Social and Political 	<ul style="list-style-type: none"> • Analysis presented to appropriate authorities • Proper sign offs • Involvement of Central Agencies • Cost limitations • Other constraints

Specifications Definition and Project Planning

Once the project has been given the "green light", project specific planning should proceed immediately. Project planning is generally conducted in a short time frame, with limited resources, whilst encompassing the entire scope of the project. As a result, if planning is poorly conducted, a poorly executed project is more likely to ensue. Adequate resources should be allocated to this phase and planning elements should be revisited, to ensure that they meet the needs of the project as the project develops.

Planning includes two main areas: a statement of work, including the options analysis, possible constraints and risks; and the specifications definition, once an option has been selected. The specifications definition includes milestone schedules, approvals, budget setting, and scheduling.

Milestone charts and master production schedules should be used to ensure that the critical path for the successful completion of the project ensues. The minimum standards for milestone charts should include: start and completion dates; completion of major deliverables; key internal and external reporting requirements; and the appropriate approval and timing of the approval required at each phase. However, it is not sufficient to merely produce such schedules; the relevant milestone information should be communicated to all relevant parties and updated on a regular basis.



Engineering and Design

Engineering and design should be divided into two main areas: preliminary concept design and detailed design. Both areas consist of similar core elements including design development, evaluation, review and approval. The distinguishing features between evaluation and review, is that an evaluation is concerned primarily with ensuring the design is reflective of the project's objectives and scope, while a review is concerned with regulations, licensing, safety and other standards.

In addition to the core elements discussed above, the detailed design phase should encompass cost management and value analysis techniques. Traditionally, cost management has not been included in this phase, however, best practices indicate that this is becoming increasingly common as an effective way to maximize value and help ensure that resources are being deployed in the most effective manner.

Preliminary Concept Design	Detailed Design
<ul style="list-style-type: none">• Defined requirements communicated• Development<ul style="list-style-type: none">- Necessary studies conducted- Consideration of life cycle costs, requirements and future requirements• Evaluation<ul style="list-style-type: none">- Provincial and local objectives<ul style="list-style-type: none">- Planning requirements• Review (Regulations, licensing, Safety, other standards)• Project Brief<ul style="list-style-type: none">- Accordance with TB requirements• Approvals<ul style="list-style-type: none">- Regulatory approvals- Planning and scheduling requirements- Concept submission	<ul style="list-style-type: none">• Development• Evaluation<ul style="list-style-type: none">- Acceptable alternatives• Review• Cost Management<ul style="list-style-type: none">- Value Analysis and EVM- Design reflective of objectives costs and constraints• Completion of drawings and specifications• Project Brief• Master Schedule• Pre-tender Estimates• Construction and Tender documentation• Approvals• Protocol and mechanism for changes

Procurement and Construction

Procurement encompasses three main areas: processes and alternatives for contracting design and construction; procurement of property, materials, equipment and land; and assessment of the cost versus quality of the proposals received.

Construction management incorporates many of the principles discussed under project and risk management. However, specific to construction management is the need for contract financial management, supervision and inspection, establishing protocol for changes required and the formulation and implementation of recovery plans.

Procurement		Construction	
Contracting Design & Construction Services	Property, Materials & Equipment Required	Construction Agreements	Contract Management
<ul style="list-style-type: none"> Options analysis <ul style="list-style-type: none"> - Outsourcing, in-house and PPP Procurement Strategy <ul style="list-style-type: none"> - Competitive vs. Non-competitive Resources <ul style="list-style-type: none"> - Available contractors - Industrial benefits Request for Proposal Assessment of Cost vs. Quality Open Tender <ul style="list-style-type: none"> - "Merx" System - "Spec" System 	<ul style="list-style-type: none"> Land acquisition and disposal Equipment and material tenders, contracts, etc. 	<ul style="list-style-type: none"> Prepared Reviewed Content formalized <ul style="list-style-type: none"> - Shop and other drawings Key project dates Testing procedures Content and production of progress reports Delivery procedures 	<ul style="list-style-type: none"> Financial management, supervision and inspection Protocol for changes required Contingency planning

Delivery

The delivery phase is crucial in order to ensure that the final product received meets both requirements and expectations. A formal process should be set-up to assess the project's completion, conduct appropriate tests to ensure proper functioning and test compliance to ensure all specifications, regulations and contractual agreements have been adhered to. Furthermore, a protocol for unsatisfactory delivery should be established to resolve any discrepancies, disagreements and issues in the most efficient and effective manner to facilitate timely project closure and delivery.

Formal Process	Unsatisfactory Delivery	Closure & Delivery
<ul style="list-style-type: none"> Assessment of Project Completion Actual vs Planned Testing Compliance 	<ul style="list-style-type: none"> Protocol Established Approvals Corrective Action 	<ul style="list-style-type: none"> Project hand-over

Follow-up

All information obtained and testing conducted should be consolidated to determine the project's success with regards to the asset built and the costs associated with its construction.

Key players involved throughout the capital project's life cycle should debrief the strategy implemented, each project phase, and milestone targets and tracking. All elements of the project's life cycle should be evaluated in order to determine both positive and negative outcomes to either implement or avoid on similar projects in the future.

Techniques and lessons learned should be communicated to all relevant parties; relevant procedures should be revised and integrated into the long-term capital planning phase.

Information Consolidation	Key Personnel
<ul style="list-style-type: none">• Information gathering• Project Analysis (from testing, etc. in delivery phase)<ul style="list-style-type: none">- Budget vs Actual- Objectives met- Key personnel• Communication of Information	<ul style="list-style-type: none">• Debriefing<ul style="list-style-type: none">- Consolidation of issues• Lessons learned• Revise Procedures<ul style="list-style-type: none">- Include in long-term planning

Appendix E:

Suggested Table of Contents for a Standard Approach to Capital Project Management Manual

APPENDIX E: SUGGESTED TABLE OF CONTENTS FOR A STANDARD APPROACH TO CAPITAL PROJECT MANAGEMENT MANUAL

1. Introduction
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 - 2.1.1.3. Hierarchy Structure and Organization chart
 - 2.1.2. Project team skill & knowledge level
 - 2.1.2.1. Consultant considerations
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 - 2.1.2.4. Other Experts
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 - 2.2.1.2. Holdbacks
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 - 2.2.2.2. Time requirements
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Appendix F:

Application of Recommendations for Health Project

APPENDIX F: APPLICATION OF RECOMMENDATIONS FOR HEALTH PROJECTS

Introduction

As noted elsewhere in this report, many of the problems experienced in the capital planning process apply to most ministries and Crown corporations. But the Ministry of Health projects can take years from conception to completion. This lengthy timeline has contributed to numerous problems including additional cost and ultimately to an impairment in the delivery of programs and service.

The recommendations included in this report attempt to improve the process for all areas of the Government, including Health. Our Guiding Principles outline this objective. Specifically the principles directly applicable to health projects include: bringing structure, discipline and understanding to the process; clarifying the roles and responsibilities of the participants in the process; increasing the rigour in the earliest phase of the process; and the recommended use of business cases in the process.

As an example of the application of the recommendations to the management process, the following paragraphs are illustrative of the potential implications for health in the more difficult areas of governance, justification and approval. We also comment on the linkage of our recommendations to some of the Ministry's own initiatives.

Governance

To address the issue of poorly defined roles and responsibilities, we have recommended that the current roles be carefully reviewed, redefined and communicated to all participants. Understanding and acceptance of these roles by all participants is an important factor for success.

The Capital Division would become involved in the planning process earlier, perhaps at the business case development stage. Capital Division would also ensure that follow-ups are completed to determine whether and how projects met their objectives. In this way there would be less need or inclination for Capital Division to delve into the implementation stages of the project.

By giving Capital Division a stronger central role to oversee projects and yet reduce their role in implementation, the process should be streamlined. Capital Division would therefore adopt the so-called "hands-around" concept, wherein their greatest direct involvement would be at the front-end and back-end of projects. They would oversee the implementation of projects through improved reporting and the right to review or investigate any capital project at any time.

The recommendations regarding reporting should strengthen Capital Divisions' oversight role for projects. Likewise the judicious use of the right to review any project (for example if the project appears to be running over budget or behind schedule) should give the Capital Division the comfort it needs to take a more "hands-off" approach through the implementation stages.

Project Justification, Selection and Approval

This part of the planning process necessitates an adequate identification of existing capital assets and their current condition. In the past this has not been possible within the health care area because of the lack of sufficient or reliable data. The Ministry of Health, with the development of the Health Capital Assessment and Planning System, is currently addressing this matter. This new system should aid the Ministry in determining more precisely the current condition of physical assets and compare it to present requirements and future service needs.

The Ministry must determine its immediate and long-term goals and objectives relative to capital spending and the identified capital need. These should be communicated to the agency planners along with guidelines for completing the various planning documents. The agencies should then develop their business cases for capital projects. We have recommended the use of a standard business case method and some rational method of ranking that would facilitate the justification and selection process.

We have also recommended the use, where possible, of standard costs and measures in the development of the business cases. These should be developed and agreed to by the key players including both the health care planning professionals and Capital Division. This will accelerate the approval process.

Finally, while the planning process is generally a linear one, there may be opportunities to perform some tasks on a concurrent rather than sequential basis. Wherever this is possible, time savings may occur. A clear process with well laid-out standards, expectations and procedures allows managers to progress in parallel rather than an uncertain process where approval is sought before going to the next unclear steps.

Linkage to Current Ministry of Health Initiatives

Some of the issues we identified were to be addressed in the Ministry of Health "Capital Plan Requirements" issued in January 2000. This document and the attached letter of February 1, 2000 to Health Authorities from the Ministry recognize the need for adequate physical asset inventories and begin the process to capture this information. These documents also detail the process for developing "project studies". It consists of two parts: the first is a needs justification, and the second is a definition of the project specifics. This model is similar to that recommended in our report. The new Health model also provides for Ministry cost sharing with other health agencies.

These new documents also communicate the Ministry's intention to fund capital improvement projects (those projects which increase the life of existing assets or make their operation more efficient or safe) by way of an allocation model. This step should improve the overall timeliness of projects.

The January 2000 document provides guidelines for completing the required planning documents by the agencies.

Finally, these new documents encourage the community health councils and services societies to work together to submit combined capital plans. The document states that this will become a requirement in the future. This should aid in streamlining the process, as the multiplicity of agencies currently slows the process. Any steps that reduce the number of parties in the process, without ignoring the vested interests of the various stakeholders, will expedite the process and result in cost savings and in faster service delivery.